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ENVIRONMENTAL PROTECTION

WATER RESOURCE MANAGEMENT

DIVISION OF WATER SUPPLY AND GEOSCIENCE

Well Construction and Maintenance; Sealing of Abandoned Wells

Standards for Individual Subsurface Sewage Disposal Systems

Adopted Amendments: N.J.A.C. 7:9A-4.3, 5.9, 9.7, and 12.6; and 7:9D-1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10 through 1.16, 2.1 through 2.11, 3.1, 3.2, 3.4, and 4.1 through 4.8

Adopted Repeal and New Rule: N.J.A.C. 7:9D-1.8

Adopted New Rules: N.J.A.C. 7:9D-1.17 and 3.5 and 7:9D Appendix

Proposed: June 19, 2017 at 49 N.J.R. 1602(a)

Adopted: November 9, 2017, by Bob Martin, Commissioner, Department of Environmental Protection.

Filed: December 7, 2017, as R.2018 d.017, **with non-substantial changes** not requiring additional public notice and comment (see N.J.A.C. 1:30-6.3).

Authority: N.J.S.A. 13:1D-1 et seq., 58:4A-4.1 et seq., 58:12A-1 et seq., and 58:10A-1 et seq.

DEP Docket Number: 08-17-05.

Effective Date: January 2, 2018

Operative Date: March 1, 2018

Expiration Date: January 31, 2021

This rule adoption may be viewed or downloaded from the Department's website at

<http://www.nj.gov/dep/rules/adoptions.html>

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The Department is adopting amendments to update the rules with regard to well drilling materials, methods, and technologies, including changes reflecting the increasing use of green energy systems, such as closed loop geothermal systems. The Department is also adopting amendments to the rules to implement provisions in the Subsurface and Percolating Waters Act, N.J.S.A. 58:4A-4.1 through 29 (Act) mandating the establishment of a continuing education program for all licensed well drillers and pump installers. In addition, the Department is adopting amendments to the enforcement provisions to address industry concerns, including increased oversight of individuals who are in violation of this chapter, and to clarify the procedures by which the Department may suspend or revoke a license. Finally, the Department is adopting amendments to the Standards for Individual Subsurface Sewage Disposal Systems, N.J.A.C. 7:9A, which govern the proper location, design, construction, installation, alteration, repair, and operation of individual subsurface sewage disposal systems, for consistency with the requirements for well design in the rules.

Summary of Hearing Officer’s Recommendation and Agency Response:

The Department held a public hearing on the notice of proposal on Thursday, August 10, 2017, at 10:00 A.M., at the New Jersey Department of Environmental Protection Public Hearing Room, Trenton, at which four individuals provided oral comments. Terry Pilawski, Bureau Chief, Bureau of Water Allocation and Well Permitting, was the hearing officer. The hearing officer has recommended that the amendments be adopted. The Department accepts the recommendation. A record of the public hearing is available for inspection in accordance with applicable law by contacting:

Department of Environmental Protection

Office of Legal Affairs

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ATTN: DEP Docket No. 08-17-05

401 East State Street, 7th Floor

Mail Code 401-04L

PO Box 402

Trenton, NJ 08625-0402

Summary of Public Comments and Agency Responses:

The following persons timely submitted comments on the notice of proposal:

1. William Anderson, Summit Drilling Co., Inc.
2. George Anderson, Summit Drilling Co., Inc.
3. Kenneth Atwood, ECDI
4. Joan Baer, Summit Drilling Co., Inc.
5. Michael Ballurio
6. Kevin Barber, Summit Drilling Co., Inc.
7. Ronald J. Barber Jr., Summit Drilling Co., Inc.
8. Lee A. Barker, Edw. King Enterprises
9. Art Becker, Drilling and Safety Consultants, LLC and Chair of the State Well Drillers and Pump Installers Examining and Advisory Board
10. Paul Bent
11. Joel Bernstein, Subsurface Environmental Technologies

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12. Michelle Betro, Summit Drilling Co., Inc.
13. Laura Bezille, Robbins Water Service
14. Eric Blois, Salomone Brothers, Inc.
15. Dan Brown, Freshwater
16. Ronald Cespedes, Summit Drilling Co., Inc.
17. John Charles, Hawk Drilling
18. Bo Crandell, Summit Drilling Co., Inc.
19. Denis Crayon, Summit Drilling Co., Inc., President of the New Jersey Groundwater Association and Treasurer and a member of the Board of Directors for the National Groundwater Association
20. Mario D'Agostino, D'Agostino Well & Water Services
21. Charles Daugherty, Summit Drilling Co., Inc.
22. Richard L. Davis, Summit Drilling Co., Inc.
23. Jeffrey Davis, Yorgey Supply Inc.
24. Nick DelVecchio, Summit Drilling Co., Inc.
25. Yecenia DeTorrice, Summit Drilling Co., Inc.
26. Juan Diaz, Summit Drilling Co., Inc.
27. Max Dieber, Rinbrand Well Drilling Co., Inc.
28. Dermot Dillon, Summit Drilling Co., Inc.
29. Tony Donnelly, Summit Drilling Co., Inc.
30. Baxter E. Duffy
31. James W. Duffy, East Coast Drilling, Inc.
32. Wesley Eichfeld, SGS

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33. Joseph E. Fichner, A-1 Well Drilling & Pump Service
34. James Flatley, Geothermal Services, Inc.
35. Sean Foster, ECDI
36. OB Dulio George Cruz, King George Enterprises, LLC
37. Daniel Halecki
38. Thomas Hanley
39. James D. Hartmann, Franklin Electric
40. Wayne Houser, Summit Drilling Co., Inc.
41. Robert Kimley
42. Mike Kondas, Summit Drilling Co., Inc.
43. Jennifer Koren, Summit Drilling Co., Inc.
44. Robert Kreilick, Summit Drilling Co., Inc.
45. Fred Kushner, Summit Drilling Co., Inc.
46. Roger Logel, Summit Drilling Co., Inc.
47. Jeremy Logel, Summit Drilling Co., Inc.
48. Andrew MacKenzie, ECDI
49. James MacLallen
50. Glenn Martin, Martin Products, Inc.
51. Tom McCabe, Summit Drilling Co., Inc.
52. Zachary McDevitt, Absecon Electric Motor Works Inc.
53. Brian McGuire
54. Matthew Melilli, ECDI
55. William Mobly

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56. Steve Moylan Jr., ECDI
57. Steve Moylan Sr., ECDI
58. Johnathan Murtha, Pickwick Well Drilling, Inc.
59. Todd Naugle, Hawk Drilling
60. Joel Neri, Allstar Drilling
61. Mark K. Oliver, Absecon Electric Motor Works Inc.
62. Gary D. Poppe, Pickwick Well Drilling, Inc.
63. Ben Primost, Pickwick Well Drilling, Inc.
64. Dennis Pruchnicki, Absecon Electric Motor Works Inc.
65. Rebecca Pruchnicki, Absecon Electric Motor Works Inc.
66. Steve Pruchnicki, Absecon Electric Motor Works Inc.
67. Wellington Reeve, ECDI
68. Stephen Rinbrand, Rinbrand Well Drilling Co., Inc.
69. Clifford Rinbrand, Rinbrand Well Drilling Co., Inc.
70. Henry N. Robbins, Robbins Water Service
71. John Robbins, Robbins Water Service
72. Marlene R. Robbins, Robbins Water Service
73. Jim Sacriponte, Franklin Electric
74. Julia C. Schaub, East Coast Drilling, Inc.
75. James F. Schultes, Jr. P.E., A.C. Schultes, Inc.
76. Kimberly Scott, East Coast Drilling, Inc.
77. Gregory Scull, Summit Drilling Co., Inc.
78. Bill Shinn, Summit Drilling Co., Inc.

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79. Matt Smart, Salomone Brothers, Inc.
80. Mary Stage, Summit Drilling Co., Inc.
81. James Steelman
82. George Strycker, Yorgey Supply Inc.
83. Delores Strycker, Retired
84. Jordan Talmage, Summit Drilling Co., Inc.
85. Colin Tish, ECDI
86. Robert Velez
87. Michael S. Wilson, Summit Drilling Co., Inc.
88. Jeff Winkowski, WB Drilling Co., Inc.
89. Barrie Woodington, Summit Drilling Co., Inc.

The comments received and the Department’s responses are summarized below. The number(s) in parentheses after each comment identify the respective commenter(s) listed above.

General Comments:

1. COMMENT: The Department received 87 letters, identical in content, from members of the New Jersey Groundwater Association in favor of the proposed rule with special attention brought to those items having the greatest potential impact on their occupation, industry and business. Those items of import included, but were not limited to several definitions in N.J.A.C. 7:9D-1.5 (“appurtenance,” “continuing education point,” “environmental resource and geotechnical well driller,” “examination and CEP manager,” “sodium-based bentonite,” “standing column well,” and “vertical closed loop

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geothermal well driller”) and certain provisions in 1.6, 1.7, 1.8, 1.9, 1.11, 1.14, 1.15, 2.1, 2.2, 2.4, 2.8, 2.9, 2.10, 3.1, 3.4, 3.5 and 4.4. (1 through 10, 12 through 74 and 76 through 89)

RESPONSE: The Department acknowledges these comments in support of the rules.

2. COMMENT: A typo occurs throughout the proposal. "Annual space" should be "annular space". (75)

RESPONSE: The Department acknowledges that this typographical error occurred twice in the summary of the notice of the proposal document but did not occur in the proposed rule text. As such, no correction is required to the rule upon adoption.

Reciprocity

3. COMMENT: The Jobs Impact statement identifies that the use of an examination and continuing education points (CEP) manager to administer the license examinations will allow for reciprocity with other states. The commenter requests clarification whether reciprocity, as used in this section, refers to examination sections being common to other entities that may use the same or similar examination for licensing of well drillers. The commenter states that reciprocity should not be interpreted, misconstrued, relate to, or otherwise imply any recognition of a well drilling license issued by another state in lieu of one issued by the State of New Jersey. (9)

RESPONSE: The noted statement in the Jobs Impact statement is an inadvertent mischaracterization of the new provision at N.J.A.C. 7:9D-1.8(a)4. In fact, the Department does not recognize other states' licenses as valid for installing wells or pumps in New Jersey. To drill wells or install well pumps in

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New Jersey, a valid New Jersey-issued license of the proper class is required. N.J.S.A. 58:4A-6 states that, “No person, partnership or corporation shall engage in well drilling or pump installation in this State, except as provided in section 20 of P.L.1947, c.377 (C.58:4A-24), unless that individual, if a person, or member of the firm, if a partnership, or executive officer, if a corporation: (1) possesses a valid New Jersey license of the proper class; or (2) secures the services of a person possessing a valid New Jersey license of the proper class.” Likewise, N.J.A.C. 7:9D-1.6(a) provides that, “No person shall drill, construct, install, repair, replace, modify, stimulate or decommission any well or engage in such business without possessing a valid New Jersey well driller's license of the proper class unless that activity is performed under the direct and immediate on-site supervision of a New Jersey licensed well driller of the proper class issued by the Department.” There is no well drilling or pump installer licensing reciprocity in the State of New Jersey with any other state. As discussed in the notice of proposal at 49 N.J.R. 1619, reciprocity may apply to the licensing examinations and CEPs; however there is no reciprocity with regard to the drilling or pump installation licenses. Under the new rule, an out-of-state applicant for a New Jersey well driller or pump installer license must pass the applicable certification examination and must demonstrate equivalent years of out-of-State experience to satisfy the experience criteria. See, N.J.A.C. 7:9D-1.8(a)3 and 4. Notably, the exams and the approved continuing education courses may be applied to not only NJ licenses, but possibly to licenses issued by other states.

The Examinations and CEP Manager

4. COMMENT: At N.J.A.C. 7:9D-1.5 the definition of “Examination and CEP manager” and in the notice of proposal Summary regarding N.J.A.C. 7:9D-1.9 there is no specific mention of the requirement for the examination and CEP manager to develop and provide licensing exams. N.J.S.A. 58:4A-10,

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Powers, Duties of the Board, provides the oversight and review of examination questions by the State Well Drillers and Pump Installers Examining and Advisory Board (Board). (9)

RESPONSE: The Department believes the existing definition of the examination and CEP manager does address this issue. The definition at N.J.A.C. 7:9D-1.5 identifies that the examination and CEP manager undertake specific tasks, including "...administration of the licensing exams pursuant to this chapter...". The Department expects any selected examination and CEP manager to participate in the development of exams, as well as in the provision of exams either directly or through a subcontracted entity, as part of the administration of the licensing exams. As discussed in the notice of proposal Summary at 49 N.J.R. 1605, "The Department will look for examination and CEP manager candidates that can offer a robust examination program that includes the periodic review and rotation of peer-reviewed exam questions to prevent overexposure and ensure that applicants are being tested on the necessary and current skills required for their specialty." Further, the Department discussed the reduced costs to the Department, "by transferring the responsibilities for proctoring exams, responding to challenges to exam questions, reviewing exam grades, and developing exam questions...". In order to establish the new program, the Department will need to identify and select an examination and CEP manager in compliance with all applicable bidding and contracting requirements. It is the Department's intention to select a suitable, qualified candidate from the industry and include appropriate stipulations in a contract with an examination and CEP manager. The Board will continue to be involved in the examination process and continuing education program in accordance with N.J.S.A. 58:4A-10, as part of the examination and CEP manager selection and contracting process.

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5. COMMENT: The examination and CEP manager should demonstrate expertise and knowledge, in a broad range of the well drilling industry and have national recognition. It should have previous, in-depth, experience in developing and administering examinations on computer platforms and have the ability to provide examination facilities in numerous locations in New Jersey and across the United States. It should have experience in developing and administering a continuing education program suitable for well drilling and pump installers. (9)

RESPONSE: The Department agrees that the examination and CEP manager should be well qualified and intends to work with the Board to engage a candidate with well drilling and pump installing industry experience. See also the response to Comment 4.

Licensing

6. COMMENT: It should be made clear that the "license" referred to in N.J.A.C. 7:9D-1.6(f) is the current license issued to the individual who is performing the well drilling and or pump installer activities. (9)

RESPONSE: The Department agrees with the commenter that N.J.A.C. 7:9D-1.6(f) requires that a current license must be present on-site and must be presented to an official upon request. Likewise, N.J.A.C. 7:9D-1.6(d) requires that a currently licensed individual must be present and on-site to construct or supervise the construction or repair of any well. The Department agrees that this means that the properly licensed individual must be physically present on the site at the time of well construction, maintenance or decommissioning activities. Pursuant to the definitions of "license of the proper class" and "license," it is clear that only individuals who are currently licensed in New Jersey are authorized to

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drill wells and install pumps within this State. Revoked, suspended, expired and out-of-State licenses do not qualify as "valid" under N.J.S.A. 58:4A-6a.

7. COMMENT: Clarification is requested whether the Department intends to allow Environmental Resource and Geotechnical (ERG) well drillers to install remediation wells, which by definition, typically include pumping equipment. A licensed ERG well driller should be authorized to install remediation wells and associated pumping equipment, which will be used for non-potable use and for remediation purposes only. (11)

RESPONSE: In this rulemaking, the Department does not allow ERG well driller licensees to install related pumping equipment because these drillers are not tested for competency regarding the installation of pumping equipment, which requires electrical, mechanical and other expertise not specifically required for the installation of category 3 and 4 wells. The ERG licensee is only authorized to install category 3 and 4 wells, including wells used for remediation as identified by the commenter. The installation of permanent pumping equipment is a separate activity that requires a New Jersey licensed pump installer, journeyman (Class B), journeyman or master well driller.

Well Construction

8. COMMENT: The notice of proposal language that discusses sealing procedures states, "...that casing is only considered "driven" when it is vertically pounded into the ground and not rotated during installation." In both instances the drilling operation is proceeding with a bit that is smaller than the casing, while the casing is advanced into "an undersized borehole." The casing shoes used in cable tool

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operation are generally larger than the shoes used with a dual rotary rig. For all practical considerations, both methods produce the same results. There is either an annular space or not. (75)

RESPONSE: The Department disagrees that a dual rotary drilling operation produces an undersized borehole into which the casing is driven. Dual rotary operations use a bit on the outside of a spun casing, which results in a borehole diameter that is not undersized in comparison to the diameter of the casing. Cable tooled casing advancement is limited to penetration into unconsolidated formations and fractured rock, unlike spun casing which can drill into competent bedrock. The exclusion to grout at N.J.A.C. 7:9D-2.10(b) applies to driven casing installations in unconsolidated formations only.

9. COMMENT: N.J.A.C. 7:9D-2.3(f)3 states that for gravel packs installed for Category 1 or 2 wells, "the gravel pack shall not extend into any confining layer above the screen." Strictly interpreted the commenter believes all wells with multiple screens and blanks could be in violation. In other areas of the rule, the water-bearing zone can be composed of multiple confining layers. Clarification is requested as to how this is interpreted when screening across the water-bearing zones or confining layers. The commenter supports extending the gravel pack into the confining layer above the top of the screen to allow for well completion and grouting while still protecting the integrity of the aquifer. (75)

RESPONSE: The Department recognizes that the geology through which a well is installed may have undesirable intervals within a single water bearing unit. Blanks are typically used by the industry to isolate those intervals to prevent fine materials from entering the well screen. However, individual water bearing units are formally mapped and established by the New Jersey Geological and Water Survey (NJG&WS). The newly added definitions of "water bearing unit" and the revised definition of

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“confining layer” at N.J.A.C. 7:9D-1.5 clarify these issues. Provided that a well with multiple screens is screened only within the single water bearing unit, which may include intervals that are undesirable and need to be isolated from the well screens, there would be no violation of that construction standard.

Further, wells that will be used for public community supply, test wells or those with a pump capacity subject to water allocation regulations (N.J.A.C. 7:19) undergo further Department review to ensure the well is properly designed.

Regarding the commenter’s recommendation to extend the gravel pack into the confining layer above the top of screen, the Department does not support the extension of gravel pack into the confining layers in single cased wells or wells without maintenance casings. Typically, in situations involving multiple cased wells with maintenance casings, the well design is subject to further Department review as part of a deviation request that, among other things, must demonstrate adequate protection of groundwater in accordance with N.J.A.C. 7:9D-2.8(a).

10. COMMENT: The commenter believes the 50 percent rule at N.J.A.C. 7:9D-2.3(f)3ii is misguided. The length of the screen and gravel packed area does impact the settlement/consolidation during grouting and development. However, the commenter believes that the "seal" length on top of the gravel pack is more important in holding back the grout pressure. This is independent of the screen and gravel pack length but a function of the well depth. (75)

RESPONSE: The Department disagrees. The amount of gravel pack within the annular space should be limited to allow for a sufficient grout seal that adequately protects groundwater quality. Moreover, the 50 percent standard that exists in the rule was not proposed for modification and the commenter

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provided no analysis or alternative standard during the public comment period for the Department to consider. The Department believes the standard as it currently exists is appropriate.

11. COMMENT: The commenter identifies that in situations involving double cased wells where maintenance (inner) casing does not extend to the ground surface, the gravel pack between the casings provides three functions: 1) holding the screen and maintenance casing in place to hold the weight of the inner casing, 2) absorbing the torque required to back off of the inner casing and 3) resisting flow between the casings. Since the 2001 rule promulgation, there is less gravel between the casings and screens have been seen to deform (twist) from the torque required to back off/unscrew from the inner casing. Less gravel reduces friction loss and increases the potential for flow up between the casings instead of through the well screen. This can cause the gravel between the casings to "liquefy" and be pumped out. Formation sand and clay follow, resulting in a catastrophic well failure mode. The need for this gravel to perform these functions between the casings is real, cannot be overemphasized and the length of gravel required is not a function of aquifer thickness or screen length. (75)

RESPONSE: The Department agrees with the commenter that there are many factors to be considered when designing a well. This is, in part, why the revisions to N.J.A.C. 7:9D-2.3(f)3ii(2) allows 75 feet of gravel pack in these situations, an increase over the previous 50-foot limit. This issue was raised during the stakeholder process by industry professionals and, based on input, the consensus was to increase this limit to 75 feet.

12. COMMENT: With regard to the new provision at N.J.A.C. 7:9D-2.4(a)5 which allows for no more than five feet of filter pack above the well screen for observation wells, the commenter suggested

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that the limitation should instead be a function of depth because when drilling a deep observation well and grouting it in a continual lift to the surface, five feet of the gravel may not be sufficient to hold back the grout above it. (75)

RESPONSE: The Department recognizes that in some cases observation wells may require additional gravel pack beyond five feet above the screen. The well design, including the proposed materials and methods for construction, and hydrogeological conditions through which that particular well will be installed should be considered. Thus, the proposed rules continue to have provisions at N.J.A.C. 7:9D-2.8 to allow a well driller to seek a deviation from well construction standards.

13. COMMENT: The commenter notes that first water is often encountered within 15-20 feet of the overburden/ bedrock interface, and therefore states that the 10 feet of screen limitation at N.J.A.C. 7:9D-2.4(b)1 is not sufficient for setting these wells which are intended to monitor light non-aqueous phase liquids (LNAPL) and other contaminants. These contaminants may be floating at the top of the water column. If depth to first water is generally not known prior to drilling, screens longer than 10 feet should be allowed. Furthermore, seasonal fluctuations in water level can make the use of a 15-foot or 20-foot screen necessary so that the monitor well does not go dry when the water level drops seasonally. The length of screen allowed in the regulations should be extended to 15 or 20 feet. At a minimum, the commenter believes longer screen length should be able to be approved through a simple deviation request at the time of permit application. The commenter believes the process of going before the Board for approval in N.J.A.C. 7:9D-2.8(c) will be too burdensome This deviation request should not require "consultation with the Board". (11)

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RESPONSE: Well permitting rules at N.J.A.C. 7:9D2.4(a)4, in effect since 2001, allow for the installation of monitoring wells with up to 25 feet of screen in unconsolidated formations and wells with up to 25 feet of screen or open borehole in bedrock with a minimum of 10 feet of casing installed into competent bedrock to isolate the overburden from the bedrock. The provision at N.J.A.C. 7:9D-2.4(b)1 was added to allow the screening of the top 10 feet of bedrock without the need for an approved deviation request. Limiting the screen length in these situations minimizes the possibility of mixing of overburden water and bedrock water. In sites where first water is near the top of bedrock, two wells may need to be installed to ensure first water is always within the screened zone of a well. The Department acknowledges that at some sites, the geology is such that a well is needed that screens across the overburden bedrock interface with up to 25 feet of screen. In these cases, in accordance with the new revisions to N.J.A.C. 7:9D-2.8(a), the driller would need to submit a deviation request. The Department clarifies that these deviations can be approved or denied by the Department's well permitting program without the need to consult with the Board. N.J.A.C. 7:9D-2.8(a) and (b) refer to site specific unusual conditions where deviations may be granted for a specific site. N.J.A.C. 7:9D-2.8(c) requires consultation with the Board when alternative materials, technologies, or installation methods are proposed for statewide approval and use.

Summary of Agency-Initiated Changes:

N.J.A.C. 7:9D-1.8(a)3 Table 1 establishes the required experience that well drillers applying for the various established licenses must demonstrate as well as the certification exams on which they must obtain a passing grade. On adoption, the Department is making several changes to Table 1 in the column in which the certification exams are listed. For the master well driller and pump installer license

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classes, reference to the Water Systems General Exam is corrected for consistency with the reference to this exam for the other license classes. An extraneous letter “M” is deleted in the list of exams for the journeyman well driller license class. In addition, the Department is including punctuation and adjusting the alignment of entries within the column so that the sublists of subject matter exam modules among which a license applicant may choose one or two, depending on the license class, are more readily discerned at quick glance.

The Department is making an administrative change to N.J.A.C. 7:9D-1.9(a), (e)1 and (f)1 with regard to the renewal of licenses. It was not the intent of the Department to create an application process for renewals, which are currently renewed when payment of the renewal fee is received. The focus of the intent of the amendments to these provisions was to add the requirements for documenting continuing education points, added throughout the rule, for renewal of licensure. Therefore, references to “license renewal applications” are deleted. A cross-reference to N.J.A.C. 7:9D-1.9(e) was added to N.J.A.C. 7:9D-1.9(a), to identify where those continuing education point requirements are located for consistency with those already identified at N.J.A.C. 7:9D-1.9(f) and to avoid confusion during the license renewal process.

The Department is also modifying the rules on adoption to grammatically correct "principle" to "principal" at N.J.A.C. 7:9D-1.9(g)3i and 1.10(j)3i. Additionally, N.J.A.C. 7:9D-1.10(g), as proposed, contained a typographical error; the word “of” in the notice of proposal is, upon adoption, corrected to “or.” The Department is also correcting two references at N.J.A.C. 7:9D-2.3(e)3iv and 2.8(c)5 to the National Sanitation Foundation, which has changed its name to NSF International.

As discussed in the Summary of the notice of proposal at 49 N.J.R. 1617, the Department has moved the penalties for construction-related violations to N.J.A.C. 7:9D-4.4(e). Despite the fact that the notice of proposal summary at 49 N.J.R. 1617 discussed the deletion of this matrix table at N.J.A.C.

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7:9D-4.4(d)2, the Department inadvertently neglected to delete it in the text of the rule proposal on pages 49 N.J.R. 1644-1645. Therefore for clarification, the adopted rule text shows the deletion of N.J.A.C. 7:9D-4.4(d)2.

In order to provide any individual who has recently tested for a monitoring well driller or soil borer license sufficient time to complete the license application process, the Department is modifying N.J.A.C. 7:9D-1.8(c), (c)1i, and (c)1ii on adoption to implement requirements for those licenses on the operative date of the rule, March 1, 2018, instead of the effective date, January 2, 2018. Because the Department will no longer issue or renew monitoring well driller or soil borer with the adoption of these amendments, the Department will allow recent successful applicants to be eligible for future conversion to the environmental resource and geotechnical well driller license in accordance with N.J.A.C. 7:9D-1.8(c). As proposed, the two provisions regarding master well driller licensing requirements for journeymen well drillers in N.J.A.C. 7:9D-1.8(a)3 Table 1 did not account for the dates coinciding with the effective date of the rule, January 2, 2018, and the day before that date. In order to eliminate the potential for a gap in the licensing process, the Department is modifying the first provision to apply on or after January 2, 2018, and the second to apply before January 2, 2018.

Federal Standards Statement

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq., require State agencies that adopt, readopt, or amend State rules that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis. N.J.A.C. 7:9D is not promulgated under the authority of, or in order to directly implement, comply with, or participate in any regulatory effort or program established under Federal law or under a State statute that incorporates or refers to Federal law, Federal standards, or Federal requirements. Additionally, there are no Federal laws, regulations, or

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standards comparable to any of the standards and requirements set forth in N.J.A.C. 7:9D. Accordingly, Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq., do not require a Federal standards analysis for this rulemaking.

Full text of the adoption follows (additions to proposal indicated in boldface with asterisks ***thus***; deletions from proposal indicated in brackets with asterisks ***[thus]***):

CHAPTER 9A
STANDARDS FOR INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEMS

SUBCHAPTER 4. SITE EVALUATION AND SYSTEM LOCATION

7:9A-4.3 Distances

The minimum separation distance between the various components of the system and the other features listed shall conform to and be maintained in accordance with Table 4.3 below. The location of a new well must be in conformance with the requirements of *N.J.A.C. 7:9D*. No permit or waiver issued outside of this chapter by any local, State or Federal entity shall be construed to permit deviation from or a waiver of the separation distances requirements listed in the Table 4.3 below.

Table 4.3 Minimum Required Separation Distances (feet)

Component	Well or Suction Line	Water Service Line	Water Course ^(1,12)	Occupied Building	Property Line ⁽¹⁵⁾	Disposal Field	Existing Seepage Pit or Cesspool	In-ground Swimming Pool
Building Sewer	25 ⁽²⁾	1	-	-	-	-	-	-
Septic Tank	50 ⁽²⁾	10	25 ^(2,5)	10 ⁽⁶⁾	5	-	-	10
D-Box ⁽¹⁴⁾	50 ⁽²⁾	10	25 ^(2,5)	10	5	-	-	10
Disposal Field ⁽¹¹⁾	100 ^(2,4)	10	50 ^(2,3,5)	25 ⁽⁷⁾	10	50 ⁽⁸⁾	50	20
Seepage Pit ⁽⁹⁾	150/100 ^(2,13)	25	100 ^(2,5)	50 ⁽⁷⁾	20	50	50 ⁽¹⁰⁾	30
Dry Well	50	-	-	-	-	50	50	-

<(1)> through <(3)> (No change.)

<(4)> This distance may be decreased by the administrative authority, to a minimum of 50 feet when either the well is provided with a water-tight casing to a depth of 100 feet or more, or where the casing is sealed into an impervious stratum which separates the waterbearing stratum from the layer of soil used

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for sanitary sewage disposal. *N.J.A.C. 7:9D* shall govern whenever the well under consideration has been installed after July 13, 1979.

<(5)> through <(15)> (No change.)

SUBCHAPTER 5. DETERMINATION OF SOIL SUITABILITY

7:9A-5.9 Hydraulic head test

(a) When a hydraulic head test is required by the administrative authority to determine the presence or absence of a perched or artesian zone of saturation, piezometers shall be installed and monitored by the applicant as follows:

1. (No change.)

2. Piezometer B shall consist of a steel or plastic casing, a minimum of two inches in diameter located two to five feet from Piezometer A and extending from above the ground surface to a minimum of one foot below the bottom of the restrictive horizon. Piezometer B must be:

i.-ii. (No change.)

(b)-(e) (No change.)

SUBCHAPTER 9. EFFLUENT DISTRIBUTION NETWORKS

7:9A-9.7 Design procedure for pressure dosing systems

(a) The following procedure shall be used for disposal fields consisting of a disposal bed or disposal trenches, which are at equal elevations.

1.-6. (No change.)

7. Step Seven: For pump systems, select the proper pump as follows:

i.-iii. (No change.)

8. (No change.)

(b) (No change.)

SUBCHAPTER 12. OPERATION AND MAINTENANCE

7:9A-12.6 System inspection protocol for inspections conducted during real property transfer

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(a)-(c) (No change.)

(d) The septic system inspector shall report the results of inspections to the administrative authority in accordance with the following:

1. An initial report shall be made within 24 hours after the inspection by telephone, facsimile, e-mail, or another means by which delivery can be verified when any of the conditions identified in the "Health Department Reporting" section of chapter Appendix F is observed; and

2. (No change in text.)

(e)-(g) (No change.)

CHAPTER 9D

WELL CONSTRUCTION AND MAINTENANCE; SEALING OF ABANDONED WELLS

SUBCHAPTER 1. GENERAL REQUIREMENTS FOR PERMITTING OF WELLS, AND FOR LICENSING OF WELL DRILLERS AND PUMP INSTALLERS; PROCEDURES AND PRACTICES OF THE STATE WELL DRILLERS AND PUMP INSTALLERS EXAMINING AND ADVISORY BOARD

7:9D-1.1 Purpose and scope

(a) The purpose of this chapter is to establish standards and requirements for all aspects of well construction and decommissioning, such that groundwater is protected, and provide a set of licensing standards to ensure that all who engage in well drilling and pump installing activities have the education, training, and experience necessary to conduct well drilling and pump installation activities in a manner that does not compromise the quality of the State's water resources or adversely impacts public health.

(b) Unless otherwise provided by rule or statute, this subchapter shall constitute the rules governing the requirements and standards for the permitting, construction, and decommissioning of wells, the standards and requirements for the licensing of all well drillers of the proper class and pump installers in accordance with N.J.S.A. 58:4A-4.1 et seq., and the activities, duties, procedures, and practices of the State Well Drillers and Pump Installers Examining and Advisory Board.

7:9D-1.2 Construction

This chapter shall be liberally construed to permit the Department and the Board to discharge their statutory functions under N.J.S.A. 58:4A-4.1 et seq., the Act.

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7:9D-1.3 Applicability

(a) This chapter applies to any person, well drilling companies, partnerships, corporations, or other entities engaged in pump installation, well, or well pump repair, well drilling, well construction, maintenance, and decommissioning of wells and to any person licensed under this chapter, or seeking a license as a well driller or pump installer of the proper class.

(b) (No change.)

7:9D-1.5 Definitions

As used in this chapter, the following words and terms shall have the following meanings unless the context clearly indicates otherwise:

...

"Act" means N.J.S.A. 58:4A-4.1 through 29, as amended and supplemented.

"Administrative authority" means the agency certified pursuant to the County Environmental Health Act, *N.J.S.A. 26:3A2-21* et seq., or the local board of health having jurisdiction. When water systems serve county, State, or Federal facilities, the administrative authority shall mean the Department.

...

"Appurtenance" means the instrument or equipment that is used to treat water or aid in the functioning of the well system including, but not limited to, water conditioning and treatment equipment, pipes, tanks, pumps, control devices, valves, filtration, circulatory systems, and flow centers.

...

"Aquifer storage and recovery well" or "ASR well" means a well that is used to store water in an aquifer during periods of low water demand and then recover the water for use during periods of high demand.

...

"Boring" or "soil boring" means any hole, any temporarily cased hole, or any other such installation using direct-push methods that is decommissioned pursuant to this chapter within 72 hours of completion.

...

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"Closed loop geothermal well" means a well or a borehole drilled to a specific depth either singly or in a series into which a continuous closed loop of pipe is inserted for the purpose of non-contact thermal energy transfer from a fluid in the loop to or from the earth.

"Commissioner" means the Commissioner of the Department of Environmental Protection or his or her designee.

"Confining layer" means a layer of natural earth materials having very low hydraulic conductivity that inhibits the movement of water into and out of a water bearing zone. A confining unit may consist of one or more confining layers.

...

"Continuing education point" or "CEP" means the unit of training a licensed well driller or licensed pump installer has received through a seminar, workshop, training course, college course, or other means to satisfy continuing education requirements as approved by the Department.

...

"Days" means calendar days, unless otherwise specified.

"Decommissioning" means the permanent closure or sealing of any well in accordance with the procedures set forth in this chapter.

...

"Dewatering well driller" means a person possessing a New Jersey dewatering well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Dewatering well" or "dewatering wellpoint" means a well or wellpoint installed for the removal of groundwater with the intent of temporarily lowering the water table or aquifer level during construction operations.

"Direct push" means the use of static force, hydraulic down pressure, and percussion to advance a sampling tool into the subsurface for collecting soil, soil gas, and groundwater samples or for injecting remediation materials.

...

"Driven" means the action of driving or pounding of the well casing vertically into the ground or the pounding of drive rods. This excludes methods where the casing is rotating as it is being installed.

...

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"Elevator borehole well driller" means a person possessing a New Jersey elevator borehole well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Environmental resource and geotechnical well driller" means a person possessing a New Jersey environmental resource and geotechnical well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Examination and CEP manager" means the Department or an entity who has contracted with the Department to undertake the following tasks: administration of the licensing exams required pursuant to this chapter; development of study materials for licensing exams, maintenance of a database that contains exam and licensing history; and a maintenance of continuing education points for all licensees.

"Flowing well" means a well from which the water flows upwards and out of the well without pumping due to natural or artificially supplied underground pressure from air or other gas.

...

"GPM" means gallons per minute.

"Groundwater" means water below the land surface in a zone of saturation.

...

"Journeyman (Class B) well driller" means a well driller possessing a New Jersey journeyman (Class B) well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Journeyman well driller" means a well driller possessing a New Jersey journeyman well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

...

"Licensee" means a driller or pump installer validly licensed pursuant to the Act and this chapter.

"Liner" means a well casing that is inserted into an existing cased borehole for the purpose of repairing a well or protecting the groundwater from contamination.

...

"Master well driller" means a well driller possessing a New Jersey master well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

...

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"Monitoring well driller" means a well driller possessing a New Jersey monitoring well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Multiple cased well" means any well that contains more than one casing or liner including, but not limited to, temporary, surface, maintenance, starter, or driven casings.

"Non-public well" means a well that provides potable water to a non-public water system as defined at *N.J.A.C. 7:10-1.3*.

"Observation well" means a well that is used to conduct aquifer pump tests for the purpose of applying for a water allocation permit or water use registration pursuant to *N.J.A.C. 7:19*.

...

"Person" means any individual, responsible corporate official, corporation, company, partnership, firm, association, owner or operator of a water supply facility, political subdivision of the State, and any state, interstate, or Federal agency.

...

"Potable water" means water used, or intended to be used, for drinking and culinary purposes, which is free from impurities in amounts sufficient to cause disease or harmful physiological effects, with the bacteriological and chemical quality conforming to applicable standards.

...

"Pump installer" means a person possessing a New Jersey license as a pump installer pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

...

"Site-wide permit" means a permit to drill 10 or more wells for the same use in a single municipality that are on a single lot, easement right-of-way, or multiple contiguous lots of common ownership, where:

1. The boreholes and any annular space remaining after the installation of equipment necessary for the intended use of the wells are sealed during construction; or
2. The wells are installed to function in a series as part of a system restricted to a single lot and block or an easement right-of-way within a single municipality, or a contiguous property of common ownership consisting of multiple lots or blocks within a single municipality.

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"Sodium-based bentonite" means bentonite that has a high swell potential, such as Wyoming bentonite.

"Soil borer" means a person possessing a New Jersey soil borer's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Standing column well" means a well installed as part of an open loop geothermal well system where water is pumped from the well, passed through a heat pump, and returned to the same well.

...

"Vertical closed loop geothermal well driller" means a well driller possessing a New Jersey vertical closed loop geothermal well driller's license pursuant to *N.J.A.C. 7:9D-1.7* and *1.8*.

"Water bearing unit" means a geologic unit, which is a formation of similar characteristics that can be distinctly mapped from over and underlying units, that is capable of producing water and is separated from other geologic units by a confining layer.

...

"Well development" means the removal of sands and drilling materials from the water bearing zones of any well to produce water that is free of visible sand and/or silt and increase its productivity.

...

"Well system" means a system, including all appurtenances thereto, that cannot function in the absence of the well and circulates, removes, or injects fluid or water through a well for any purpose.

7:9D-1.6 General provisions

(a)-(b) (No change.)

(c) No person shall install, repair, remove, alter, or replace a well pump or well pumping equipment or engage in such business without being a New Jersey licensed pump installer or New Jersey well driller of the proper class or being in the presence of and under the on-site supervision of a New Jersey licensed pump installer or a New Jersey licensed well driller of the proper class. The name of the person or well drilling company engaged in pump installation activities shall be prominently displayed on the equipment, including but not limited to, vehicles and large equipment, used by the pump installer or well driller.

(d) No person shall conduct any operation involving the drilling, coring, boring, driving, jetting, digging, or other construction or repair of any well pursuant to *N.J.A.C. 7:9D-1.11* without being a New Jersey well driller of the proper class or being in the presence of and under the onsite supervision of a licensed well driller of the proper class. The name of the well drilling company shall be displayed

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on the equipment used by such driller.

1. (No change.)

(e) No well driller shall perform any well drilling operation without maintaining the area surrounding the operation in a sanitary condition and providing proper containment of all materials and surface drainage away from the well. Discharges to surface waters, including storm drains, are regulated pursuant to N.J.A.C. 7:14A-1. Disposal of contaminated water is regulated pursuant to *N.J.A.C. 7:26G*.

(f) No person shall engage in well drilling or pump installing activities without having onsite, at all times, a license issued pursuant to this chapter and shall present it to any State, county, or local official upon request.

(g) Licensees shall notify the Department in writing pursuant to N.J.A.C. 7:9D-1.17 of every change in mailing address or telephone number within 14 calendar days of the change. The notification shall be submitted to the Department at the address set forth in N.J.A.C. 7:9D-1.17.

7:9D-1.7 General provisions for well driller licenses and pump installer licenses

(a) Well driller licenses are classified as follows:

1. A master well driller is authorized to:

i. Drill, construct, install, repair, replace, modify, stimulate, disinfect, or disconnect a well of any category;

ii. Install, maintain, winterize, or replace well pumping equipment and appurtenances, storage tanks, and appurtenances and connecting lines between a well and storage tank;

iii.-ix. (No change.)

2. A journeyman well driller is authorized to:

i. Drill, construct, install, repair, replace, modify, stimulate, disinfect, or disconnect a well of any category except public community supply wells;

ii. Install, maintain, winterize, or replace well pumping equipment and appurtenances, storage tanks, and appurtenances and connecting lines between a well and storage tank;

iii. (No change.)

iv. Seal and decommission any well except public community water supply wells in compliance with

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N.J.A.C. 7:9D-3; and

v. (No change.)

3. A journeyman (Class B) well driller is authorized to:

i. Drill, construct, install, repair, replace, modify, stimulate, disinfect, or disconnect a well of any category except public community supply wells and Category 3 wells;

ii. Install, maintain, winterize, or replace well pumping equipment and appurtenances, storage tanks, and appurtenances and connecting lines between a well and storage tank;

iii. (No change.)

iv. Decommission any well, except public community water supply wells or Category 3 wells, in compliance with
N.J.A.C. 7:9D-3; and

v. (No change.)

4. A dewatering well driller is authorized to:

i. (No change.)

ii. Decommission only Category 6 wells that have not penetrated any confining layers; and

iii. (No change.)

5. An environmental resource and geotechnical well driller is authorized to:

i. Drill, construct, install, repair, replace, modify, stimulate, disinfect, or disconnect any Category 3 and 4 well that does not require permanent well pumping equipment;

ii. Decommission Category 3 and 4 wells in compliance with N.J.A.C. 7:9D-3; and

iii. Qualify as a candidate for appointment to the Board.

6. A vertical closed loop geothermal well driller is authorized to:

i. Drill, construct, install, repair, replace, or modify any Category 5 well that does not require permanent well pumping equipment;

ii. Decommission Category 5 wells in compliance with N.J.A.C. 7:9D-3; and

iii. Qualify as a candidate for appointment to the Board.

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7. An elevator borehole well driller is authorized to:

- i. Drill, construct, install, repair, replace, modify, or disconnect any Category 7 well;
- ii. Decommission any Category 7 well in compliance with N.J.A.C. 7:9D-3; and
- iii. Qualify as a candidate for appointment to the Board.

8. Prior to July 1, 2020, a soil borer is authorized to:

- i. Drill and install any Category 4 well;
- ii. Decommission any Category 4 wells in compliance with N.J.A.C. 7:9D-3; and
- iii. (No change.)

9. Prior to July 1, 2020, a monitoring well driller is authorized to:

- i. Drill, construct, install, repair, replace, modify, stimulate, disinfect, or disconnect any Category 3 and Category 4 well that does not require permanent well pumping equipment;
- ii. Seal and decommission any Category 3 and Category 4 well in compliance with N.J.A.C. 7:9D-3; and
- iii. (No change.)

(b) A pump installer is authorized to:

- 1. Install, maintain, disinfect, winterize, or replace well pumping equipment and appurtenances, storage tanks, and appurtenances and connecting lines between a well and storage tank;
- 2.-3. (No change.)

(c) (No change.)

7:9D-1.8 License application and licensing examination procedures

(a) An applicant for a well driller or pump installer license shall:

- 1. Submit a complete application on the form prescribed by the Department pursuant to (d) below;
- 2. Demonstrate that he or she has satisfied all terms and conditions of any final revocation or suspension of a previously issued license or resolved any outstanding final order or penalty pursuant to

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the Act;

3. Demonstrate that he or she has met the experience requirements by conducting activities in compliance with this chapter within the State of New Jersey, except as provided at (a)4 below, and has obtained a passing grade on the certification exams administered by an examination and CEP manager selected by the Department and required for the proper license class pursuant to Table 1 below, including New Jersey modules, which shall have been taken within two years prior to submitting an application:

Table 1

Application for NJ Well Driller License Class	Required Proficiency as Demonstrated by Certification Exams	Required Experience
Master well driller Licensed as a Journeyman well driller *[(after the effective date of this rule)]* *on or after January 2, 2018*	General Drilling*[,]**;* Augering*[,]**and Monitoring*;* Two of the following: Cable Tool*;* Air Rotary*;* Mud Rotary*;, or * Reverse Rotary*;* *[General]*Water Systems *General Exam *; Water Systems < 100 gpm*;*;	Five years experience, including two years as a Journeyman well driller; experience must include construction or decommissioning of five wells from Category 1, 2, or 3 within the preceding five years from the date of application.

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<p>Licensed as a Journeyman well driller before *[(one day before effective date of rule)]* *January 2, 2018*</p>	<p>Water Systems > 100 gpm*;* NJ Regulations for Masters*.* One of the following: Cable Tool*;* Air Rotary*;* Reverse Rotary*;* Water Systems > 100 gpm*;* NJ Regulations for Masters*.*</p>	<p>Five years experience, including two years as a Journeyman well driller; experience must include construction or decommissioning of five wells from Category 1, 2, or 3 within the preceding five years from the date of application.</p>
<p>Journeyman well driller</p>	<p>General Drilling*;* *[M -]*Augering and Monitoring*;* One of the following: Cable Tool*;* Air Rotary*;* Mud Rotary*, or* Reverse Rotary*;* </p>	<p>Three years experience under the supervision of an ERG, Journeyman (Class B), Journeyman, Master, or VCLG well driller; experience must include construction or decommissioning of five wells from Category 1, 2, or 3 within the preceding five years from the date of application.</p>

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Water Systems General Exam*;*

One of the following:

Water Systems < 100 gpm*,
or*

Water Systems > 100 gpm*;*

NJ Regulations for

Journeyman*.*

Journeyman (Class B)
well driller

General Drilling*;*

One of the following:

Cable Tool*,*

Air Rotary*,*

Mud Rotary*, **or***

Reverse Rotary*;*

Water Systems General Exam*;*

One of the following:

Water Systems < 100 gpm*,

or*

Water Systems > 100 gpm*;*

Three years experience
under the supervision

of an ERG,

Journeyman (Class B),
Journeyman, Master or
VCLG well driller;

experience must
include construction or
decommissioning of

five wells from

Category 1, 2, or 3

within the preceding

five years from the date
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	NJ Regulations for Journeyman (Class B)*.*	
Environmental Resource and Geotechnical (ERG) well driller	General Drilling*;* Augering and Monitoring*;* NJ Regulations for ERG drilling*.*	Two years experience under the supervision of an ERG, Journeyman (Class B), Journeyman, Master or VCLG well driller; experience must include construction or decommissioning of five wells within the preceding five years years from the date of application.
Dewatering well driller	General Drilling*;* Jetting and Driving wells*;* NJ Regulations for Dewatering*.*	Two years experience under the supervision of a Dewatering, Journeyman (Class B), Journeyman, Master or ERG well driller; experience must include construction or decommissioning of five wells within the preceding five years from the date of application.

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<p>Vertical Closed Loop Geothermal (VCLG) well driller</p>	<p>General Drilling*;* [Certified]*Vertical Closed Loop Drilling*;* One of the following: Cable Tool*;* Air Rotary*;* Mud Rotary*, or* Reverse Rotary*;* NJ Regulations for VCLG drilling*.*</p>	<p>Two years experience under the supervision of a Dewatering, Journeyman (Class B), Journeyman, Master or ERG well driller; experience must include construction or decommissioning of five wells within the preceding five years from the date of application.</p>
<p>Elevator Borehole well driller</p>	<p>General Drilling*;* NJ Regulations for Elevator boreholes*.*</p>	<p>Two years experience drilling elevator boreholes; Effective *[(two years after the effective date of this RULE)] *JANUARY 2, 2020*, the applicant must demonstrate that the experience has been obtained under the supervision of a Master, Journeyman, Journeyman</p>

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		(Class B), or Elevator Borehole well driller.
Pump Installer	Water Systems *[general exam]* *General Exam;* One of the following: Water Systems <100 gpm*, or* Water Systems >100 gpm*;* NJ Regulations for Pump Installer*.*	Two years experience under the supervision of Pump Installer, Journeyman, Journeyman(Class B), or Master well driller.

4. Demonstrate that an applicant that does not possess the required experience in the State of New Jersey, shall pass the certifications set forth in (a)3 above and demonstrate the equivalent years of experience in any other state.

(b) In the event that a certification exam required pursuant to (a) above is no longer offered or is changed, the Board may approve an alternate certification exam. A list of these approved alternate certification exams will be published on the Department's website pursuant to N.J.A.C. 7:9D-1.17.

(c) As of *[the effective date of the rule]* **March 1, 2018**:

1. The Department will no longer issue or renew monitoring well driller or soil borer licenses.
 - i. Any person licensed as a monitoring well driller pursuant **to** this chapter **as of** (one day before the effective date of the rule) **before March 1, 2018**, may, in lieu of applying for a new license pursuant to (a) above, apply for renewal as an environmental resource and geotechnical well driller upon expiration of the monitoring well driller license;
 - ii. Any person licensed as a soil borer pursuant to this chapter **as of** (one day before the effective date of the rule) **before March 1, 2018**, may, in lieu of applying for a new license pursuant to (a) above, successfully complete a Department-approved training course, to renew their license as an environmental resource and geotechnical well driller. Any licensee who fails to complete this training course shall no longer be licensed pursuant to this chapter; and

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iii. A licensee in good standing may submit in writing to the Department a request for a waiver from the training requirements in (c)1ii above on the basis of active duty in the military or reserves, illness, disability, or other good cause.

2. Any person licensed as a journeyman (Class B) well driller may choose to qualify to be licensed as a journeyman well driller upon successful completion of a Department-approved training course.

3. Experience obtained under the supervision of a monitoring well driller or soil borer is considered equivalent to experience obtained under the supervision of an environmental resource and geotechnical well driller to meet the experience requirements of (a) above.

(d) Applications for a license under this section shall be submitted on a form prescribed by the Department signed by the applicant. The application requires an applicant to provide the following information including, but not limited to:

1. Name, e-mail and mailing address, age, and daytime or work telephone number;
2. The last four digits of the applicant's Social Security number;
3. Education;
4. Description of work experience, including documentation verifying experience requirements in Table 1 at (a) above, such as W-2 forms, well records, well decommissioning reports, tax records, invoices or a copy of an out-of-State license, and/or company registration;
5. Two professional references that verify work experience described in (d)4 above. For all in-State applicants, except master well drillers, one reference must be a well driller; and
6. A signed and notarized certification verifying the accuracy of the document.

(e) The Department shall review each application for a well driller or pump installer license for completeness of all the information required in (d) above and notify the applicant in writing of any deficiencies.

1. The Department will present the names and qualifications of eligible license applicants to the Board at the next scheduled Board meeting, provided that the application is complete and received by the Department no later than 10 working days before that meeting.
2. The Board shall review the list of candidates and their qualifications and recommend to the Commissioner through a Board resolution that a license be issued or denied pursuant to the procedures established at *N.J.A.C. 7:9D-1.10*.

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(f) The Department shall notify all applicants of the Board's recommendation in writing.

(g) The Department shall, upon recommendation of the Board and payment of the required fee, issue new licenses to persons to engage in well drilling or pump installing.

7:9D-1.9 Licensing examination application fees, licensing fees, and renewal requirements for all well driller licenses of the proper class, pump installer licenses, and establishment of special dedicated non-lapsing account

(a) All classes of well driller licenses and pump installer licenses shall be renewed once every three years on a schedule that applies to all licensees. An application for renewal shall be made by submitting: *[the renewal form specified by the Department,]* documentation of continuing education requirements in accordance with *(e) and* (f) below*[,]* and the renewal fee prior to June 30.

(b) The initial and renewal fees for all licenses issued pursuant to this chapter and for late renewals are as follows:

1. All well driller license classes \$ 300.00

Recodify existing 6. and 7. as 2. and 3. (No change in text.)

(c) A licensee who fails to renew his or her license prior to the June 30 renewal payment deadline may have his or her license renewed by payment of the appropriate renewal fee and late payment fee within six months following the renewal date of the license, provided all other requirements of this section are met.

(d) A licensee who fails to renew his or her license within six months following the expiration date of the license shall submit an application for a new license pursuant to *N.J.A.C. 7:9D-1.8(a)* and meet the continuing education requirements for the expired license set forth at (e)2 or (f)2 below.

(e) Prior to April 1, 2020, all licensees shall obtain CEPs in order to be eligible for license renewal as follows:

1. *[For all license renewal applications submitted prior]* ***Prior*** to July 1, 2020, all applicants for renewal licenses shall demonstrate that they have completed at least seven CEPs, within the prior three-year period;

2. CEPs shall be obtained a minimum of 90 days prior to license term expiration;

3. Licensees who have been licensed for less than three years shall not be required to demonstrate that they have completed the required number of CEPs prior to their first license renewal.

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(f) Beginning April 1, 2020, all licensees shall obtain CEPs in order to be eligible for license renewal as follows:

1. *[For all license renewal applications submitted on]* ***On*** or after April 1, 2023, and every three years thereafter, all applicants for renewal licenses shall demonstrate that they have completed at least 21 CEPs, within the prior three-year period;
2. CEPs shall be obtained a minimum of 90 days prior to license term expiration;
3. Licensees who have been licensed for less than three years shall not be required to demonstrate that they have completed the required number of CEPs prior to their first license renewal; and
4. A licensee in good standing may submit in writing to the Department, pursuant to N.J.A.C. 7:9D-1.17, a request, including supporting documentation, for a waiver from continuing education requirements pursuant to this subsection on the basis of active duty in the military or reserves, illness, disability, or other good cause.

(g) The Department shall review and approve the seminars, workshops, training courses, college courses, or other means designated to fulfill the continuing education point requirements set forth at (f) above as follows:

1. All requests for approval of a course shall be submitted to the Department at least 90 days prior to the start date of the course. The Department, in its discretion, may on a case-by-case basis, decide to review a course that is submitted outside of this timeframe or that is submitted after the completion of the course, provided that a recommendation has been made by the Board pursuant to *N.J.A.C. 7:9D-1.10(j)* and all other information outlined in (g)3 below is submitted.
2. Course approvals shall be reevaluated at the end of the three-year licensing cycle for which they were approved.
3. The Department shall not approve continuing education points for courses where:
 - i. The *[principle]* ***principal*** focus of the course is direct sales of products;
 - ii. The course provider does not provide a certification that all information required to be submitted to the examination and CEP manager that administers the continuing education program including, but not limited to, documentation related to the course and certification of attendance, will be submitted in the required format no later than the end of the continuing education period;
 - iii. The course instructor is not qualified in the subject area; or
 - iv. The course content is not related to the well drilling or pump installing industry.

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4. Requests for course review shall be made in writing to the Department at the address set forth in N.J.A.C. 7:9D-1.17 and shall include the following information:

- i. A detailed description of the course content;
- ii. An agenda for the course, including duration of each course topic;
- iii. All proposed course duration, dates, and locations;
- iv. Name(s) and qualifications of instructors, including any required certifications for the subject area, education, experience, and licenses held;
- v. Procedures for verification of the identity of the attendees;
- vi. A sample of the course completion certification forms to be used to document attendance;
- vii. A statement that the course provider will submit to the examination and CEP manager that administers the continuing education program, documentation related to the course and attendees in the format required, no later than the end of the continuing education period;
- viii. Proposed number of CEPs to be assigned for the course; and
- ix. Any changes that have been made to the course since the prior approval date, for those courses requesting renewal under this section.

5. After receiving a Board recommendation pursuant to *N.J.A.C. 7:9D-1.10(f)*, the Department shall notify the applicant in writing of its decision to approve or deny CEPs for the course.

6. A list of approved courses shall be made publically available on the Department's website, which is found at N.J.A.C. 7:9D-1.17.

(h) (No change in text.)

7:9D-1.10 State Well Drillers and Pump Installers Examining and

Advisory Board

(a)-(e) (No change.)

(f) The duties of the Board shall include, but not be limited to, the following:

1. Review applications for new licenses and make recommendations as follows:

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- i. Ascertain whether the applicants have met the qualifications and experience requirements set forth at *N.J.A.C. 7:9D-1.8(a)*;
 - ii. Review exam results to determine if applicants have passed the required licensing exams set forth at *N.J.A.C. 7:9D-1.8(a)*;
 - iii. Ascertain eligibility of the applicant consistent with *N.J.A.C. 7:9D-1.8(a)2*;
 - iv. Make a recommendation to the Department for the issuance or denial of an application for a license pursuant to this chapter; and
 - v. Review the compliance record of an applicant;
2. Make a recommendation to the Department concerning the renewal of a license by reviewing the applicant's compliance with the continuing education requirements at *N.J.A.C. 7:9D-1.9(f)*;
 3. Make a recommendation to the Commissioner for suspension or revocation of a license in accordance with (i) below;
 4. Review and recommend courses that fulfill the continuing education point requirements set forth at *N.J.A.C. 7:9D-1.9(f)*, in accordance with (i) below;
 5. Review certification examinations required for licensure pursuant to *N.J.A.C. 7:9D-1.8*;
 6. Review and modify the content of the New Jersey modules of the examinations required for licensure pursuant to *N.J.A.C. 7:9D-1.8*;
 7. Recommend to the Department amendments to this chapter; and
 8. Make a recommendation to the Department regarding alternative materials, technologies, or installation methods in accordance with *N.J.A.C. 7:9D-2.8(c)*.
- (g) The Board shall make recommendations on licensure **[of]** ***or*** denial as follows:
1. An applicant may be recommended for licensure where:
 - i. The eligibility requirements related to work experience have been satisfied pursuant to *N.J.A.C. 7:9D-1.8*;
 - ii. A passing grade has been obtained on all required certifications; and
 - iii. A completed application has been submitted to the Department; and

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2. An applicant may not be recommended for licensure where:

i. A final administrative order or judicial order has been issued pursuant to this chapter or the applicant has not complied with a final unstayed order issued by the Department;

ii. Supporting documentation for an application for a license uses experience from a well that was constructed in violation of this chapter;

iii. Another license issued to the applicant under this chapter has been revoked and/or the terms of the revocation have not been resolved;

iv. Another license issued to the applicant under this chapter has been suspended and the applicant has not resolved the issues related to the suspension; or

v. Payment or an arrangement to pay a final administrative penalty or a court-imposed penalty has not been made.

(h) A recommendation shall be adopted at the next scheduled meeting following completion of the written examination and submission of a complete application for a license required pursuant to *N.J.A.C. 7:9D-1.8*.

(i) For suspension or revocation of a license, the Board shall make recommendations to the Commissioner as follows:

1. Any complaint or charges made against a licensee indicating that the licensee may be or may have engaged in violation(s) of the Act or any rule adopted pursuant thereto, as stated at *N.J.A.C. 7:9D-4.6(a)*, shall be submitted to the Board in writing pursuant to *N.J.A.C. 7:9D-1.17* and sworn to by the complainant.

2. At the next scheduled Board meeting following filing of the sworn complaint or charges that are received at least 30 days prior to the next scheduled meeting, the Board shall determine if the complaint or charges shall be heard or shall be dismissed as unfounded or trivial. If the Board determines to hear the charges, the Board shall schedule a hearing within three months of the date on which the sworn complaint or charges were presented to the Board, unless the Board determines that good cause exists for delay.

i. The Board shall serve notice of the charges or complaint on the licensee by certified mail, return receipt requested, or personal service at the address on file with the Department, a minimum of 45 days prior to the date of the scheduled hearing. This notice shall include:

(1) The date, time, and place of the hearing;

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(2) A copy of the sworn complaint or charges and any documentation regarding the complaint or charges;

(3) A statement of the licensee's right to appear personally or by counsel, to question witnesses regarding the complaint or charges and to produce evidence in the licensee's defense;

(4) The licensee's obligation, at least 30 calendar days prior to the hearing, to advise the Board if the licensee or counsel intends to appear at the hearing; and

(5) The licensee's obligation, at least 30 calendar days prior to the hearing, to provide to the Board any evidence, materials, statements, documents, list of witnesses, and any other information the licensee believes will assist the Board in making its recommendation.

ii. The Board may require by subpoena or in writing, the attendance of witnesses at the hearing and the production at the hearing of any books, papers, and/or documents as it may require;

iii. The Board shall hold the hearing to review the complaint and charges, and to hear testimony and receive evidence of the licensee, the Department, and any witnesses. At the hearing, the licensee shall have the right to appear personally and/or by counsel and to question witnesses and/or produce evidence in the licensee's defense.

iv. The Board shall review all evidence and testimony presented during the hearing and shall conduct deliberations in accordance with the Senator Byron M. Baer Open Public Meetings Act, *N.J.S.A. 10:4-6 et seq.*

v. Subsequent to the conclusion of the hearing, the Board shall vote to dismiss the charges or to recommend that the Commissioner suspend a license for a period of less than one year or revoke it indefinitely. A recommendation may include conditions related to the recommended suspension or revocation.

vi. Subsequent to the conclusion of the hearing, if the Board recommends revocation or suspension, the Board shall submit the recommendation in writing to the Commissioner accompanied by all documentation reviewed during and resulting from the hearing and a detailed basis for the recommendation.

vii. The licensee and the Department shall be notified of the Board's recommendation.

3. After one year from the date of revocation and once all conditions of the revocation are satisfied, a person whose license has been revoked may apply for a new license pursuant to *N.J.A.C. 7:9D-1.8(a)*.

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4. A person whose license has been suspended may be reinstated, after the period of suspension has ended and all conditions of the suspension have been satisfied, upon review and approval of the Board.

(j) The Board shall review and recommend the seminars, workshops, training courses, college courses, or other means designated to fulfill the continuing education point requirements set forth at *N.J.A.C. 7:9D-1.9(f)*, as follows:

1. The Board shall review a completed application made to the Department for the approval of a continuing education course pursuant to *N.J.A.C. 7:9D-1.9(f)* to ensure that it meets with the intent of the Act and covers subject matter related to the industry that is presented by a qualified instructor.

2. Course recommendations shall be reevaluated at the end of the three-year licensing cycle for which they were recommended;

3. The Board shall not recommend continuing education points for courses where:

i. The *[principle]* ***principal*** focus of the course is direct sales of products;

ii. The course provider does not provide a certification that all information required to be submitted to the examination and CEP manager, including, but not limited to, documentation related to the course and certification of attendance, will be submitted in the required format no later than the end of the continuing education period;

iii. The course instructor is not qualified in the subject area; and

iv. The course content is not related to the well drilling or pump installing industry.

7:9D-1.11 Well permits

(a) (No change.)

(b) The use of a well shall not be redesignated pursuant to (a) above unless the well driller is able to verify that the well to be redesignated satisfies all applicable construction standards established for the new use of the well.

(c) A site-wide permit may be obtained for 10 or more wells for the same use, where the borehole and any annular space remaining after the installation of equipment necessary for the intended use of the well are sealed during construction or where the wells are installed to function in a series as part of a system, such as dewatering wells and wellpoints, temperature probes, electrodes, injection wells used for bioremediation or chemical remediation, wick drain, soil boring, soil vapor extraction, air sparge, closed-loop geothermal, cathodic protection, vibrating wire piezometer, pneumatic piezometer, and borros anchor.

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(d) Well permits are non-transferable and valid for a period of one year from the date of issuance, except for well permits issued for domestic use, which are valid for a period of two years.

1. (No change.)

(e) Except for general permits-by-rule established pursuant to (g) below, the well driller shall keep an electronic or paper copy of the State well permits and shall make the permits available onsite at all times for inspection by any State, county, or local official. The well driller shall provide the property owner with a copy of the permit in advance of drilling activity, which shall be made available for inspection upon request of any State, county, or local official.

(f) A State well permit shall be required prior to the construction of all wells as described in N.J.A.C. 7:9D-2, except for those wells described in (g) and (h) below. An applicant for a permit to drill, construct, install, physically alter, or redesignate the use shall submit an application as follows:

1. For each well requiring a permit, a well permit application shall be submitted via the Department's electronic permitting system, which requires the owner's name and address, name of facility, well driller's name and address, the proposed diameter, the proposed depth, the proposed pumping capacity, the type of well, the proposed location of well in relation to any building structure and the potential sources of contamination identified in *N.J.A.C. 7:9D-2.7(a)* through (c), the date of application, and the electronic certification of the well driller who has submitted the application form. For applications that cannot be accurately submitted via the Department's electronic permitting system or where applicants have no access to a computer, the Department requires the submission of an application on a paper form prescribed by the Department. In addition to the information listed in this paragraph, a completed paper application requires the signature of the property owner, the signature of the well driller, and the New Jersey registration number of the well driller submitting the paper application.

2. For applications for public community water supply wells, including supply and test wells for future potable use, the following additional information shall be required:

i. The permit application number of the Permit to Construct the public community water supply wells required pursuant to N.J.A.C. 7:10-11; and

ii. All well permits submitted for public community water supply or test wells for future potable use shall include a copy of the schematic drawing of the proposed or existing well construction.

3. The proposed well location (horizontal data point), as well as the method used to obtain the proposed well location, shall be reported in all well applications according to (f)2i through iv below. Explanatory information and program contacts are provided on the Department's website at www.nj.gov/dep/watersupply or by contacting the Department pursuant to N.J.A.C. 7:9D-1.17.

i. (No change.)

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ii. Horizontal data points shall be submitted in New Jersey State Plane coordinates using the North American Datum of 1983 (NAD 1983), and shall conform to *N.J.A.C. 7:1D* Appendix A, New Jersey Department of Environmental Protection Geographic Information System Mapping and Digital Data Standards, incorporated herein by reference, as amended and supplemented. This can also be found electronically at: http://www.nj.gov/dep/rules/rules/njac7_1d.pdf.

iii. Well locational information shall be reported using one of the following methods:

(1) Global Positioning System (GPS). GPS data shall be obtained in accordance with Department standards set forth at *N.J.A.C. 7:1D* Appendix A. More information on GPS is available on the Department's Bureau of Geographic Information Systems' website at <http://www.nj.gov/dep/gis>. The GPS coordinates shall be collected by the well drillers as close as possible to the proposed well location;

(2) NJ-GeoWeb. Access to NJ-GeoWeb and a tutorial is available through the Department's Bureau of Geographic Information Systems' (BGIS) website at <http://www.nj.gov/dep/gis>; or

(3) (No change.)

(g) As provided by N.J.S.A. 58:4A-14a(2), the following activities are considered general permits-by-rule and may be conducted by a well driller without an individual permit issued by the Department:

1.-2. (No change.)

3. Soil borings and any Category 4 wells that are 50 feet or less in total depth and 8.5 inches or less in borehole diameter;

4. (No change.)

5. Dewatering wells or dewatering wellpoints that are 25 feet or less in total depth and six inches or less in borehole diameter; and

6. Elevator jackholes or boreholes requiring casing as per *N.J.A.C. 7:9D-2.5(c)* that are installed in a manner that is protective of groundwater in accordance with the New Jersey Department of Community Affairs, Division of Codes and Standards, Uniform Construction Code, *N.J.A.C. 5:23* and the American Society of Mechanical Engineers, Safety Code for Elevators and Escalators at A17.1, which are incorporated herein by reference, as amended and supplemented.

(h) Any activity performed pursuant to (g) above shall be performed and completed by a well driller and any resulting well shall be constructed and decommissioned in accordance with *N.J.A.C. 7:9D-2* and 3, except that no well record or well decommissioning report shall be required.

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(i) (No change.)

(j) The owner of the property on which a well is drilled shall be responsible for ensuring that all information provided to the well driller for the well permit application is true, accurate, and complete. The well driller shall be responsible for providing accurate information regarding the property, the property owner information, the well location, and proposed construction information on the well permit application in accordance with (f) above. In cases where the property owner has designated an authorized agent in writing, the agent shall assume the owner's responsibility for the information on the permit application.

(k) The well permit application shall be returned without review to the well driller if the Department determines that:

1. The application is incomplete, contains inaccurate information, lacks sufficient information, or is illegible; or
2. The application is not accompanied by the required fee.

(l) (No change.)

7:9D-1.12 Provisions for issuance of emergency well drilling permits

(a) (No change.)

(b) A well driller requesting an emergency well permit under this section shall contact the Department on the day of the emergency or, when the emergency occurs after business hours, on a weekend, or on a holiday, the next working day thereafter. The well driller must submit a completed well permit application via the Department's electronic permitting portal prior to the start of any well drilling activity, except as follows:

1. For well permits that cannot be submitted electronically, the well driller shall submit the application via facsimile pursuant to N.J.A.C. 7:9D-1.17 prior to the start of drilling. Within five business days of the emergency well permit number issuance, the well driller shall submit to the Department a completed well permit application, including the original signatures of the owner and well driller and fees. The Department may not issue emergency well permits to applicants who repeatedly fail to submit the completed well permit application within five days.

2. The well driller shall not apply for an emergency permit for a Category 1 or Category 2 well located in an area identified via the Department's well permitting portal as a known contaminated area or areas of known or suspected salt water intrusion or when the proposed location is within 500 feet of any salt water or brackish water body, without prior consultation with the Department. The driller shall contact the Department in writing to request consultation regarding construction prior to submitting an

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emergency well permit application.

(c) The Department, upon issuance of an emergency permit, shall assign to the well driller an emergency well drilling permit number and specify the date of approval. The well driller shall make an electronic or paper copy of the approved permit available for any onsite inspection by any authorized local, county, State, or Federal official.

(d) All emergency wells must meet construction standards, including those for a known or suspected contaminated area or where there is known or suspected salt water intrusion. The Department shall deny a permit for wells not constructed in accordance with this chapter. In this instance, the well driller shall maintain a copy of the completed permit application onsite for inspection by any authorized local, county, State, or Federal officials.

7:9D-1.13 Provisions for issuance of expedited well drilling permits

(a)-(d) (No change.)

(e) An expedited well permit approval may be issued for a public community supply well only in those cases where the Department has issued its approval to construct the well in accordance with the New Jersey Safe Drinking Water Act rules, *N.J.A.C. 7:10*.

7:9D-1.14 Provisions for denial, revocation, or cancellation of well permits

(a) (No change.)

(b) The Department may revoke a well permit upon a determination of the following:

1. (No change.)

2. The owner, well driller, or both failed to comply with any requirement of the Act or this subchapter or has not complied with one or more conditions of the State well permit issued for the particular well.

(c) Within 90 days after the date of expiration of a well permit, the well driller shall cancel all approved State well permits which have expired and for which well construction was never initiated. All cancellations shall be submitted using the Department's electronic permitting system. If the original well permit was issued on paper, the well driller may submit a paper cancellation form available on the Department's website pursuant to *N.J.A.C. 7:9D-1.17*, which includes well permit number(s), name of owner, signature of drilling contractor, registration number, and date.

7:9D-1.15 Well record and well decommissioning reporting requirements

(a) All well records shall be maintained as follows:

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1. Within 90 days of completion of the drilling, constructing, installing, repairing, replacing, redesignating, or modifying any well requiring a permit to drill, the licensed well driller who performed the work or provided the onsite supervision shall submit a completed well record via the Department's electronic permitting system. For well records that cannot be accurately submitted via the Department's electronic permitting system or where applicants have no access to a computer, the Department may allow submission of a well record on a paper form prescribed by the Department. In addition to the information listed in (a)3 below, a completed paper well record requires the signature of the well driller submitting the paper well record.

i. (No change.)

2. Where a well is equipped with a pump having a capacity of 70 gpm or more and the equipment is installed after the well record has been submitted, the well record shall be amended by the well driller or pump installer and resubmitted to the Department through the electronic permitting system within 90 days of installation of the pumping equipment. If the pump is installed by a pump installer or a well driller from a drilling company other than the one listed on the original well permit, the following information shall be submitted via e-mail pursuant to N.J.A.C. 7:9D-1.17: pump type, capacity, depth setting, horsepower, date of pump installation, well permit number, and name and license number of the person who installed the pump;

3. Well records shall be accurate, complete, and include, at a minimum, the following: the geologic log as defined in this chapter, the location of the well, the date of well construction and date well completed, the size and depth of the well, the diameter of the borehole and well casing installed, and the length of well casing, the length of any well screen or open hole interval, a description of all equipment, type and amount of grout, and materials used to construct the well, the static water level and yield of the well, information on any permanent well pumping equipment installed by the well driller or pump installer, name and registration number of the well driller who constructed the well, and other such information pertaining to the construction of the well; and

4. The as-built location of the well shall be reported in all well records as follows:

i. (No change.)

ii. Horizontal data points shall be submitted in New Jersey State Plane coordinates using the North American Datum of 1983 (NAD 1983), and shall conform to *N.J.A.C. 7:1D* Appendix A, "New Jersey Department of Environmental Protection Geographic Information System Mapping and Digital Data Standards," which is incorporated herein by reference, as amended and supplemented, and can also be electronically found at: http://www.nj.gov/dep/rules/rules/njac7_1d.pdf.

iii. Well locational information shall be reported using one of the following methods:

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(1) Global Positioning System (GPS). GPS data shall be obtained using receivers that are either mapping grade or resource grade in accordance with Department standards set forth at *N.J.A.C. 7:1D Appendix A*. More information on GPS is available on the Department's Bureau of Geographic Information Systems' web site at <http://www.nj.gov/dep/gis/>. The GPS coordinates shall be collected by the well drillers as close as possible to the as-built well location; or

(2) (No change.)

(b) Where a site-wide permit is issued, one well record form shall be submitted for all wells that are the subject of that permit. The information submitted shall include the total number of wells installed, a site plan depicting the location of each well, the site specific local identification name or number, total depth, diameter, and any additional information requested by the Department.

(c) All well decommissioning reports shall be submitted as follows:

1. Within 90 days of completion of the decommissioning of a well, the well driller who decommissioned the well or who provided the onsite supervision of the well decommissioning shall submit a completed well decommissioning report and any relevant attachments, via the Department's electronic permitting system. For well decommissioning reports that cannot be accurately submitted via the Department's electronic permitting system or where applicants have no access to a computer, the Department may allow submission of a well decommissioning report on a paper form prescribed by the Department. In addition to the information listed in (c)2 below, a completed paper well decommissioning report requires the signature of the well driller submitting the paper well decommissioning report.

2. A well decommissioning report shall include:

i. The date(s) the well was decommissioned;

ii. The permit number (if available) of the well decommissioned;

iii. The authorization number for the decommissioning plan approval in accordance with *N.J.A.C. 7:9D-3.1*, including the date and name of the Department reviewer, if applicable;

iv. The property owner's name and address;

v. The facility and location information where the well was located, including county, township, lot, and block;

vi. Local well identification number (ID), where applicable;

vii. Well use;

viii. The total well depth, well diameter, well casing materials, and well screen materials;

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- ix. The method and a description of the type and amount of materials used to decommission the well;
 - x. The drilling company name and address;
 - xi. The name and either the license or registration number of the driller who decommissioned the well; and
 - xii. The location of the well shall be reported in all well decommissioning reports in accordance with (a)4 above.
3. Where a site-wide permit is issued, and only a portion of the wells drilled under that permit are decommissioned, one well decommissioning report representing the deepest well that was decommissioned shall be submitted and a table listing the site specific local identification name or number and depths of all the decommissioned wells must be attached.

7:9D-1.16 Fees for permit to drill well

(a) A non-refundable permit fee is required for any well constructed pursuant to this chapter. Payment shall be made by electronic check or credit card. In the case of a paper permit application, payment shall be made by check or money order made payable to "Treasurer, State of New Jersey" and submitted with the appropriate permit application to the Department pursuant to N.J.A.C. 7:9D-1.17.

(b) Well permit fees are assessed as follows:

1.-2. (No change.)

3. Each site-wide permit application submitted pursuant to *N.J.A.C. 7:9D-1.11(c)* shall be accompanied by a fee of \$ 1,300.

7:9D-1.17 Program information

(a) Unless otherwise specified, forms, well search procedures, licensing information, approved alternate materials and technologies pursuant to *N.J.A.C. 7:9D-2.8*, and other information related to this chapter can be requested from the Division of Water Supply and Geoscience at the address in (b) below, by telephone at (609) 984-6831, by fax at (609) 633-1231, by e-mail at wellpermitting@dep.nj.gov, or obtained through the Division's website at www.nj.gov/dep/watersupply. Further information about the Department can be accessed at www.nj.gov/dep.

(b) Fees, forms, requests for approval, and correspondence related to this chapter shall be submitted to the Well Permitting Program, Division of Water Supply and Geoscience, New Jersey Department of Environmental Protection, Mail Code 401-04Q, PO Box 420, Trenton, NJ 08625-0420, or by e-mail at wellpermitting@dep.nj.gov.

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(c) Correspondence or other information directed to the State Well Drillers and Pump Installers Examining and Advisory Board shall be submitted in care of the New Jersey State Well Drillers and Pump Installers Examining and Advisory Board at the address specified in (b) above.

(d) Requests for approval, forms, or other materials sent or delivered to the Department at an address other than those listed in (a) through (c) above shall not be deemed to have been received for the purposes of calculating review deadlines or other time periods under this chapter.

(e) Changes in mailing address or telephone number pursuant to *N.J.A.C. 7:9D-1.6(g)* shall be submitted to the Well Permitting Program, Division of Water Supply and Geoscience, New Jersey Department of Environmental Protection, Mail Code 401-04Q, PO Box 420, Trenton, NJ 08625-0420, or by e-mail at wellpermitting@dep.nj.gov.

SUBCHAPTER 2. REQUIREMENTS AND PROCEDURES FOR THE CONSTRUCTION, INSTALLATION, OPERATION, AND MAINTENANCE OF WELLS

7:9D-2.1 Well categories

(a) The following well categories are for the purposes of establishing general and specific well construction standards:

1. Category 1 Potable Water Supply Wells: includes all public water supply wells (community and non-community), as defined in *N.J.A.C. 7:10*; non-public wells, domestic wells, and potable aquifer storage and recovery wells;

2. Category 2 Non-Potable Water Wells: includes all wells that are used for water withdrawal, injection, or recharge including, but not limited to, fire protection, irrigation, test, industrial, livestock, non-potable aquifer storage, and recovery wells, cooling, open loop, and standing column geothermal, injection, and recharge wells;

3. Category 3 Cased Environmental Resource and Geotechnical Wells: includes all cased non-water supply wells that are used for environmental engineering and remediation, or geotechnical investigation including, but not limited to, monitoring, air sparging, soil vapor extraction, recovery, observation wells, cathodic protection, methane gas extraction, borros anchors, inclinometers, extensometers, electrodes (including heated element wells), and injection wells used for bioremediation or chemical remediation;

4. Category 4 Uncased Environmental Resource and Geotechnical Borings: includes all uncased non-water supply wells that are used for environmental engineering and remediation, or geotechnical investigation including, but not limited to, soil borings, probe holes, wick drains, uncased holes, and borings installed through the use of direct-push technologies.

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5. Category 5 Closed-loop Geothermal Wells;

6. Category 6 Dewatering Wells: includes dewatering wells or dewatering wellpoints;

7. Category 7 Elevator Boreholes: includes boreholes or jackholes drilled for the installation of elevator shafts; and

8. Category 8 Oil and Gas Exploration Wells.

7:9D-2.2 General construction and maintenance requirements for all wells

(a) The following general construction requirements shall apply to the construction of all categories of wells pursuant to the Act:

1.-3. (No change.)

4. The Department may prohibit for use in the construction or maintenance of any well any material or equipment that may pose a hazard to public health or the environment;

5. (No change.)

6. (No change in text.)

7. (No change.)

8. A drive shoe shall be placed on casing that is to be driven, and granular or powdered sodium-based bentonite shall be hydrated and pooled around the outside perimeter of the casing to create a protective barrier while drilling;

9. When casing is to be installed into an oversized borehole, the borehole diameter shall be at least four inches greater than the inside diameter of the well casing to be installed, except for the following:

i. Category 3 environmental resource and geotechnical wells, which must be constructed in accordance with *N.J.A.C. 7:9D-2.4(d)*; and

ii. Category 5 closed loop geothermal wells, which must be constructed in accordance with *N.J.A.C. 7:9D-2.5*;

10. Where applicable, all annular space between well casings, and the annular space between any casing and borehole, shall be sealed immediately following the setting of the well casing, but no later than 24 hours after the well casing has been set in place. In unconsolidated formations, a head of drilling fluid shall be maintained in the borehole and the well driller shall ensure that the entire annular space *[is]* to be sealed is clear of obstruction(s);

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11. (No change.)

12. A well shall not be screened or gravel packed in more than one water bearing unit as determined by the Department or across a confining unit unless explicitly authorized in a permit issued pursuant to this chapter in accordance with *N.J.A.C. 7:9D-2.8*;

13. Until construction of the well is completed, adequate protection shall be provided for the top of the borehole and/or the top of the well casing to prevent surface contamination from entering the well and to prevent a safety hazard during the drilling operation and when the well driller is not at the drilling site;

14. When the drilling of a borehole for any well is suspended, the borehole shall be considered abandoned and subject to the decommissioning requirements in *N.J.A.C. 7:9D-3*.

i. Boreholes or partially constructed wells that are deemed to be inadequate for the intended use by the driller shall be immediately decommissioned in accordance with the requirements of *N.J.A.C. 7:9D-3*.

ii. Removal of the drilling rig from the borehole or incomplete well shall be allowable to conduct geophysical and hydraulic testing, to change or repair drilling equipment, to enable the driller to accommodate changes in material or drilling methods, or to allow for the curing of grout.

15. Once the well has been installed, the well casing shall be securely capped until the well is placed in service or until the well is properly decommissioned. The cap shall be threaded onto the casing, or be a friction type device which locks onto the outside of the casing, or a blank sanitary well seal, or any other equivalent type of cap as may be approved by the Department;

16.-17. (No change.)

18. If the Department determines that any well system, or any appurtenance thereto, is not being properly maintained, or has deteriorated to such an extent that contamination might enter the well or enter the groundwater or constitute a physical hazard, the Department may order the property owner to hire a well driller to perform work on the well system or appurtenances thereto as is deemed necessary to prevent contamination of the groundwater or mitigate the physical hazard;

19. When permanent well pumping equipment is required for any well, all installation or replacement work shall be performed by a pump installer or master journeyman, or journeyman (Class B) well driller. All such work shall conform with the standards set forth in *N.J.A.C. 5:23-3.16* and *13:31-3*; and

20. Any portion of a borehole which is drilled into a confining layer or through a confining layer where the deeper aquifer will not be used, or any portion of a borehole that will extend 20 feet or more below the bottom of the completed well, shall be considered abandoned and that portion of the borehole shall be decommissioned prior to the completion of the well in accordance with *N.J.A.C. 7:9D-3*.

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(b) The following additional construction requirements shall apply to the construction of any well pursuant to the Act that is installed in an area of known or suspected contamination or where there is known or suspected salt water intrusion:

1. Wells that will traverse through a known or suspected contaminated area into a lower water bearing unit shall be double-cased. The outer-most well casing shall be constructed into the first significant confining layer which separates the water supply from any such contamination. This casing shall extend at least 20 feet into the confining layer or to the base of the confining layer;
2. All wells with casing that extends through known or suspected salt water into fresh water shall be double-cased; and
3. The annular space between the casing and borehole shall be sealed in accordance with *N.J.A.C. 7:9D-2.9* and *2.10*. The annular space between all subsequent well casings installed shall also be permanently sealed to protect all underlying aquifers.

7:9D-2.3 Specific requirements for the construction and maintenance of Category 1 and Category 2 wells

(a) In addition to the well permitting requirements in *N.J.A.C. 7:9D-1* and the well construction standards in *N.J.A.C. 7:9D-2.2*, the following requirements shall also apply to all Category 1 wells:

1. All parts of the well system shall be tested, installed, designed, located, and constructed in accordance with all applicable sections of *N.J.A.C. 7:10-11* or *12*;
2. All wells shall be disinfected pursuant to the applicable requirements of *N.J.A.C. 7:10-11* or *12* following installation, redevelopment, maintenance, well repair, and/or pump repair;
3. (No change.)
4. For potable water supply wells installed in consolidated formations, the well casing shall not be less than six inches in inner diameter; and
5. All well systems that may require water treatment pursuant to (a)1 above shall conform with all applicable requirements set forth in *N.J.A.C. 7:10-11* or *12*.

(b) In addition to the well permitting requirements in *N.J.A.C. 7:9D-1* and the well construction standards in *N.J.A.C. 7:9D-2.2*, the following requirements shall also apply to all Category 1 and 2 wells:

1. No new or replacement Category 1 or Category 2 well shall be located or enclosed in a basement or cellar of a building;

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2. All well casings shall extend a minimum of 12 inches above grade and shall be equipped with pitless adapters or pitless well units. The pitless adapter or pitless well unit requirement does not apply to wells equipped with a turbine pump or to irrigation wells.

i. Exceptions to this 12-inch requirement are: those well casings located in a well pit or pump house where adequate protection from surface drainage or contamination is provided and those located in driveways as flush mount installations provided with a water tight lid; and

ii. All wells shall be equipped with a down-facing casing vent, screened to prevent the entry of insects and located at least 12 inches above the grade, except for:

(1) Wells located within the 100-year flood elevation, which shall be: installed with a watertight cap, where feasible; or equipped with a down-facing vent, screened to prevent the entry of insects and located at least 12 inches above the 100-year flood elevation; and

(2) Flowing wells, which shall be capped in accordance with *N.J.A.C. 7:9D-2.2(a)16*;

3. Any repairs made to existing wells or pump systems, where the well head terminates below ground, shall include extending the well casing above grade and installing a pitless adapter. Extending the well casing above grade shall be accomplished by either welding additional casing on the existing casing, or the use of a gasketed, water-tight casing adapter which complies with the standards for pitless adapters set forth at (b)6ii below;

4.-5. (No change.)

6. All permanent well pumping equipment, well pump controls, pitless well adapters and pitless well units for Category 1 and 2 wells shall be installed as follows:

vi. (No change.)

vii. Pitless well units, pitless well adapters and pitless well caps shall be manufactured and installed in accordance with the Water Systems Council Performance Standards and Recommended Installation Procedures for Sanitary Water Well Pitless Adapters, Pitless Units, and Well Caps (PAS-97(04)), incorporated herein by reference, as amended and supplemented. The standard may be obtained from the Water Systems Council, National Programs Office, 1101 30th Street, N.W., Suite 500, Washington, DC 20007, Phone: (202) 625-4387, www.watersystemscouncil.org;

viii. The lateral discharge line from the well shall be covered with a minimum of three feet of earth and well pumps and appurtenant equipment shall be designed and installed to ensure adequate protection of the water supply and protection against freezing of the water;

iv.-viii. (No change.)

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ix. The field connection between the pitless well unit and the lateral discharge line shall be either threaded, flanged, welded, or a mechanical joint, and shall be constructed and installed so as to be watertight;

x. Each well pump system shall have a foot-valve or a check valve;

xi. (No change in text.)

xii. Any well with a yield of less than five gpm shall be equipped with a low water level cut-off device;

Recodify existing xiv.-xv. as xiii.-xiv. (No change in text.)

xv. The pumping equipment shall be located so as to allow convenient access for the removal and repair of the pump and related appurtenances;

xvi. (No change in text.)

xvii. A pressure sensing device, for example, a switch, transducer, or relay, and a thermal overload switch shall be included on all pump installations in accordance with manufacturer's specifications;

xviii. A pressure relief device, such as a valve, is required on all pumping systems; and

xix. Pump controls and accessories shall be housed outside of the well casing and either in a secured and protected building or otherwise secured and protected in accordance with manufacturer's specifications.

(c) Category 1 and 2 wells installed in unconsolidated formations shall be constructed as follows:

1. When used, all well screens shall be properly sized to produce water free of sand and silt at the well head to the extent that the sand and silt will not interfere with the intended use and operation of the well system. For domestic wells, the well screen shall be properly sized to produce water free of sand and silt of five ppm or less.

(d) Category 1 and 2 wells installed in consolidated formations shall be constructed as follows:

1. All well casing shall be steel and shall conform to the minimum specifications and requirements set forth in Table 2 of (e)4 below;

2. In accordance with one of the following:

i. Each well shall have a minimum of 50 feet of casing and be constructed with a minimum of 20 feet of casing set into unweathered rock. All wells shall have a minimum length of 50 feet of grout seal extending from the bottom of the casing; or

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ii. Each well shall be constructed by drilling an oversized borehole at least four inches larger than the casing diameter to a minimum depth of at least 80 feet, provided rock is not encountered. Prior to inserting the casing, the borehole shall be filled with bentonite grout and then the casing shall be driven until refusal as a result of encountering competent rock. The remaining annular space shall be grouted under pressure using a tremie pipe; and

3. If geologic conditions, for example, broken rock, mud seams, etc., are encountered when drilling below the base of the permanent casing, which prevent the driller from constructing the well in accordance with this subchapter, a deviation from the construction standards shall be requested in accordance with *N.J.A.C. 7:9D-2.8*, before proceeding any further with the well installation.

(e) All materials used for the maintenance, replacement, repair, or modification of any Category 1 or 2 well shall meet the following requirements:

1.-2. (No change.)

3. Plastic well casing shall conform to the following requirements:

i.-ii. (No change.)

iii. Plastic well casing shall meet the requirements specified in the American Society for Testing and Materials (ASTM) Standard F480-12, "Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80," incorporated herein by reference, as amended and supplemented, which is available at www.astm.org;

iv. Plastic well casing shall also meet the requirements of the *[National Sanitation Foundation]* ***NSF International*** Standard Number 14; "Plastics Piping System Components and Related Materials," incorporated herein by reference, as amended and supplemented, which is available at www.nsf.org;

Recodify existing vi.-vii. as v.-vi. (No change in text.)

4. Standard steel casing shall be manufactured and installed to conform to ASTM designation A-53/A53M, which is available at www.astm.org, or American Petroleum Institute (API) standard Specifications API 5CT and API 5D-1999, or API 5CT and API 5D, incorporated herein by reference, as amended and supplemented. The latter are available from API at www.api.org. All steel casing shall be manufactured to conform to the American National Standards Institute (ANSI) dimensions and shall conform to the minimum specifications and requirements listed in Table 2 below:

TABLE 2

(No change in text.)

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5. Stainless steel casing shall be manufactured and installed to conform to ASTM standard A778-01, A312/A312M-11 and A409/A409M-09, which is incorporated herein by reference, as amended and supplemented, which is available at www.astm.org.

6. (No change in text.)

(f) All gravel or filter packs installed in Category 1 or 2 wells shall conform to the following requirements:

1. All gravel or filter pack placed between the borehole and the well screen shall be clean, washed with potable water, and disinfected prior to emplacement, or provisions made for performing disinfection in place. Gravel pack shall be disinfected in accordance with American Water Works Association (AWWA) standard for disinfection of wells ANSI/AWWA-C654, which is incorporated herein by reference, as amended and supplemented, and available at www.awwa.org and may include the introduction of granular chlorine or chlorine tablets during the gravel pack operation;

2. (No change.)

3. The gravel pack shall not extend into any confining layer above the screen:

i. (No change.)

ii. For well screens greater than 20 feet in length, the filter pack shall not extend above the top of the well screen by more than 50 percent of the length of the well screen;

(1) For single cased wells, the filter pack shall not extend more than 50 feet above the top of any well screen; and

(2) For multiple cased wells constructed with ungrouted maintenance casings, the filter pack shall not extend more than 75 feet above the top of the well screen.

4.-5. (No change.)

(g) In addition to the general well permitting requirements in N.J.A.C. 7:9D-1 and the construction requirements in *N.J.A.C. 7:9D-2.2* and *2.3*, the following specific requirements shall apply to all open loop geothermal wells constructed for heating and cooling:

1. Unless otherwise approved by the Department, all return water shall be through a return well to the originating water bearing unit. No flowing wells may be used as part of an open loop geothermal system unless the flowing water is captured and returned to the originating water bearing unit;

2.-4. (No change.)

7:9D-2.4 Requirements for the construction and maintenance of all Category 3 and 4 wells

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(a) In addition to the well permitting requirements in N.J.A.C. 7:9D-1 and the general construction specifications in *N.J.A.C. 7:9D-2.2*, the following specific requirements shall apply to all Category 3 and 4 wells:

1. The State well permit number shall be prominently displayed and permanently affixed to cased wells in addition to the site-specific well identification number set forth on the approved well permit application (for example, MW-1);

2.-3. (No change.)

4. For all monitoring wells, no more than 25 feet total of well screen shall be installed. For all monitoring wells constructed without a screen, there shall be no more than 25 feet total of open borehole;

5. No more than five feet of filter pack shall be placed above the top of the well screen;

6. Protective steel casing shall be installed to a minimum depth of two feet below grade, equipped with a steel locking cap and securely set in concrete. This requirement shall only apply to all above grade well installations and does not apply to wells that require connection to a manifold system, for example, soil vapor extraction wells, or groundwater treatment wells;

7. All flush-mounted wells shall be constructed with manholes, locking caps, and seals to prevent leakage of surface water into the well. This requirement does not apply to wells that require connection to a manifold system, for example, soil vapor extraction wells, or groundwater treatment wells; and

8. Below-grade well installations shall be in accordance with the Department's Field Sampling Procedures Manual, August 2005, as amended and supplemented.

(b) Category 3 and 4 wells in consolidated formations shall be constructed in accordance with the following:

1. Wells drilled to screen across the overburden bedrock interface shall be constructed using a maximum of 10 feet of well screen. In all other cases, the borehole drilled to case off the overburden shall extend a minimum of 10 feet into competent bedrock; and

2. (No change.)

(c) Category 3 and 4 wells in unconsolidated aquifers where a confining layer(s) exist shall be constructed in accordance with the following:

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1. Any screened interval or filter pack shall not extend across the interface of a confining layer and an aquifer.

(d) Category 3 and 4 wells in unconsolidated aquifers using direct push technologies are permitted to be installed to a maximum depth of 30 feet and grouted in accordance with *N.J.A.C. 7:9D-2.9* and *2.10*.

(e) Category 3 and 4 geotechnical borings involving the use of direct-push technologies shall be installed such that the borehole can be decommissioned in accordance with *N.J.A.C. 7:9D-3*.

(f) In addition to the general well drilling and well permitting requirements in *N.J.A.C. 7:9D-1* and *2.2*, the following requirements shall apply to the construction of all cathodic protection wells:

1. The borehole diameter shall be at least four inches larger than the diameter of the anode, cathode, or casing to be used;

2. The top of a cathodic protection well casing shall be fitted with watertight caps, covers, "U" bends, or equivalent devices or housings to prevent entry of surface water and pollutants. All such covers shall allow venting of gases from the well; and

3. The annular space between the casing and the oversized borehole shall be sealed in accordance with the requirements in *N.J.A.C. 7:9D-2.9* and *2.10*.

7:9D-2.5 Requirements for the installation of Category 5, 6, and 7 wells

(a) In addition to the well permitting requirements in *N.J.A.C. 7:9D-1* and the well construction requirements in *N.J.A.C. 7:9D-2.2*, the following requirements apply to all Category 5 vertical closed loop geothermal wells:

1. (No change.)

2. The tremie or grout pipe shall be installed to the total drilled depth upon completion of the borehole. The entire annular space between the closed loop and the uncased borehole shall be tremie pressure grouted in accordance with *N.J.A.C. 7:9D-2.9* and *2.10* using the following materials:

i. Sodium-based bentonite, cement-based geothermal grout in accordance with Table 4 at Appendix A, bentonite-based geothermal grout mixed in accordance with Table 5 at Appendix A and incorporated herein by reference or equal for wells constructed into unconsolidated formations; and

ii. Cement-based geothermal grout or bentonite-based geothermal grout containing a minimum silica sand content of 200 pounds per 50 pounds of bentonite for wells constructed into consolidated formations;

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3. (No change.)

4. Pipe material for the underground buried portion of the heat exchanger shall be polyethylene pipe as specified below:

i. 160 psi Polyethylene - All material shall maintain a 1600 psi hydrostatic design basis at 73.4 degrees F per ASTM D-2837-11, and shall be listed in PPI TR4 as a PE3408 piping formulation. The material shall be a high density, polyethylene extrusion compound having a cell classification of PE345434C or PE355434C with a UV stabilizer of C, D or E as specified in ASTM D-3350-10A with the following exception: this material shall exhibit zero failures (FO) when tested for 192 or more hours under ASTM D-1693-08, condition C, as required in ASTM D-3350-10A, incorporated herein by reference, as amended and supplemented;

ii. PEXa crosslinked high density polyethylene piping manufactured in accordance with ASTM F-876 to a Standard Dimension Ratio (SDR) of 9 and rated at 160 psi at 73.4 degrees Fahrenheit per ASTM D-2837, incorporated herein by reference, as amended and supplemented.

5. Buried pipe systems shall be joined so that the resultant assembly is leak-proof using one of the following methods:

i. The heat fusion process in accordance with the pipe manufacturer's specifications;

ii. Those joined using the International Ground Source Heat Pump Association (IGSHPA) approved mechanical stab fittings; or

iii. Polymer electro-fusion fittings and cold-expansion compression-sleeve fittings for the joining of PEXa piping in accordance with IGSHPA and the manufacturer's specifications.

(b) In addition to the well permitting requirements in N.J.A.C. 7:9D-1 and the well construction standards in *N.J.A.C. 7:9D-2.2*, the following requirements shall apply to all Category 6 dewatering wells or dewatering wellpoints:

1. (No change.)

2. A dewatering well which penetrates a confined aquifer shall be installed by a New Jersey licensed master, journeyman or journeyman (Class B) well driller and constructed in accordance with the requirements in *N.J.A.C. 7:9D-2.2*;

3.-6. (No change.)

(c) In addition to the general well drilling and well permitting requirements in N.J.A.C. 7:9D-1 and 2.2, the construction of all Category 7 wells and boreholes shall be in accordance with the New Jersey Department of Community Affairs, Division of Codes and Standards, Uniform Construction Code at

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N.J.A.C. 5:23 and the American Society of Mechanical Engineers, Safety Code for Elevators and Escalators at A17.1, and shall meet the following requirements:

1.-3. (No change.)

4. To prevent any contaminants from entering the groundwater at the bottom of the casing, the bottom of the casing shall be:

i.-ii. (No change.)

7:9D-2.6 Specific requirements for the installation of Category 8 wells

In addition to the general well drilling and well permitting requirements in *N.J.A.C. 7:9D-1* and any applicable construction requirements in *N.J.A.C. 7:9D-2.2*, all oil and gas exploration wells shall conform to the installation and reporting requirements pursuant to *N.J.S.A. 13:1M-1* et seq.

7:9D-2.7 Minimum distance requirements

(a) All new Category 1 and Category 2 wells shall be located at least five feet horizontally from a building or any portion thereof, except for a pump house.

(b) All Category 1 wells and components shall be located no less than the minimum distances prescribed as follows (all distances are in feet):

Component	Building sewer	Septic tank	Distribution box	Disposal field	Seepage pit*	Dry well	Cess-pool	Fuel Storage tank
Well	25	50	50	100	150	50	150	25
Suction line	25	50	50	100	100	50	150	-
Water service line	5	10	10	10	10	-	25	-

*Note: The Department may reduce the 150-foot minimum distance between a new well and seepage pit system as a condition of well permit approval where the well casing is sealed into a confining layer separating the aquifer from the stratum of soil used for sewage disposal or where the well is constructed with additional casing.

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1.-2. (No change.)

(c) (No change.)

(d) Additional minimum distance requirements for any well may be required by the Department as necessary to protect groundwater supplies in areas of known contamination.

(e) (No change.)

7:9D-2.8 Deviation from construction standards and approval of alternative materials and methods

(a) Where unusual conditions occur or known or suspected health hazards exist at a well site and compliance with this subchapter shall not result in a satisfactory well or protection of the groundwater resource or water supply, the well driller may request a deviation from the standards of this chapter. All deviations from standards shall be requested pursuant to *N.J.A.C. 7:9D-1.11*, shall be in writing, and shall include as appropriate:

1.-4. (No change.)

5. The unusual conditions or known or suspected health hazards existing at the well site that prevent the installation of a well in accordance with this subchapter;

6. (No change.)

7. The proposed method of construction that the well driller believes shall be adequate for each well;

8. A diagram showing the pertinent features of the proposed well design and construction; and

9. Where a deviation from the construction standards of this chapter is required for compliance with the Technical Requirements for Site Remediation, *N.J.A.C. 7:26E*, the authorized Licensed Site Remediation Professional shall submit a statement explaining the basis for the deviation and the proposed deviation requested pursuant to (a)5 and 6 above.

(b) The Department's well permitting program shall:

1. Provide the driller with written approval pursuant to this chapter of the deviation based on site-specific conditions, which may include special requirements; or

2. Provide a written denial of the deviation citing specific reasons for the denial.

(c) The Department, after consultation with the Board, may grant written approval for the use of alternative materials, technologies, or installation methods not currently listed in this chapter if an applicant demonstrates that the proposed material, technology, or installation method:

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1. Is not expressly prohibited by this chapter;
 2. Meets or exceeds the standards specified in this subchapter;
 3. Is protective of the environment and public health and safety;
 4. Is suitable for the physical and chemical conditions of the site, and meets or exceeds the durability of other materials approved in accordance with this subchapter;
 5. Is certified to the appropriate standards, based on the well use as set forth in N.J.A.C. 7:9D-2, by the *[National Sanitation Foundation]* ***NSF International*** (NSF), the American Petroleum Institute (API), the American Society for Testing and Materials (ASTM), and/or meets or exceeds the guidelines and recommendations of National Ground Water Association (NGWA), International Ground Source Heat Pump Association (IGSHPA), or the American Water Works Association (AWWA); and
 6. Is tested to demonstrate compliance with (c)1 through 4 above and complies with any applicable industry guidelines or standards as established by organizations, such as those listed in (c)5 above. If no guidelines or standards exist, the Department shall specify the test procedure.
- (d) The Department may require tests required pursuant to (c) above to be repeated if, at any time there is reason to believe that the material does not conform or no longer conforms to the criteria on which its approval was based; and
- (e) A person may request approval from the Department for the use of alternative materials, technologies, or installation methods not currently listed in this chapter, pursuant to (c) above, by submitting a written request to the Department pursuant to N.J.A.C. 7:9D-1.17 that includes all necessary information and supporting documentation that demonstrates that all of the applicable criteria listed in (c) above are met.
- (f) The Department may retract or modify the written approval of any material, technology, or installation method issued pursuant to this section based on new information that demonstrates that the material, technology, or installation method does not comply with the criteria in (c) above.
- (g) Alternative materials approved or revoked shall be posted on the Department's webpage pursuant to N.J.A.C. 7:9D-1.17.

7:9D-2.9 Required materials for sealing the annular space of any well

- (a) Except with the written approval from the Department pursuant to *N.J.A.C. 7:9D-2.8*, only the following materials shall be acceptable for the sealing of the annular space between the casing and the oversized borehole or between casing(s) of multiple cased wells:

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1. Portland Neat Cement in accordance with *N.J.A.C. 7:9D* Appendix A, Table 1, which is incorporated herein by reference;
2. Portland Cement and Sodium-based Bentonite in accordance with *N.J.A.C. 7:9D* Appendix A, Table 2, which is incorporated herein by reference;
3. Sodium-based Bentonite in accordance with *N.J.A.C. 7:9D* Appendix A, Table 3, which is incorporated herein by reference;
4. Cement-based geothermal grout in accordance with *N.J.A.C. 7:9D* Appendix A, Table 4, which is incorporated herein by reference;
5. Bentonite-based geothermal grout or equal in accordance with *N.J.A.C. 7:9D* Appendix A, Table 5, which is incorporated herein by reference; or
6. Sodium-based Bentonite chips and shaped pellets, may be used in accordance with *N.J.A.C. 7:9D-2.10(a)5* provided they shall not be used in an environment where it will come in contact with groundwater of a pH of less than 5.0 or a total dissolved solids content in excess of 1,000 ppm.

(b) All materials specified in (a)1 through 5 above shall be accurately measured prior to mixing. All grout materials shall have a maximum permeability of 1×10^{-7} centimeters per second when prepared in accordance with manufacturer's specifications. The permeability value shall be obtained using ASTM method D5084 or equivalent, incorporated herein by reference, as amended and supplemented, as approved by the Department.

(c) (No change.)

(d) Bentonite-based thermally enhanced geothermal grout materials containing a minimum silica sand content of 200 pounds per 50 pounds of bentonite, may be used in consolidated formations, provided the permeability meets the value specified at (b) above. All other Bentonite-based grout materials shall not be used for sealing any annular space in consolidated formations, or in those instances where it will come in contact with groundwater of a pH of less than 5.0 or a total dissolved solids content in excess of 1,000 ppm.

(e) Where the grout material extends through zones of salt water, a cement-based grout approved for use in salt water environments shall be used. See *N.J.A.C. 7:9D* Appendix A for mixes approved for use in salt water environments.

7:9D-2.10 Required procedures for sealing the annular space of any well

(a) The annular space within any well shall be sealed in accordance with one of the following methods:

1.-2. (No change.)

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3. The displacement method shall be used only for wells in consolidated formations. A sufficient quantity of grout shall be pumped under pressure through a tremie pipe into the oversized borehole to ensure that the annular space will be completely filled with grout after the emplacement of a plugged casing into the borehole;

4. For the casing method (Halliburton Method), the grout shall be forced from the inside of the casing into the annular space utilizing a plug or a series of plugs. Grouting shall take place from the bottom up with the casing held in suspension; or

5. Sodium-based bentonite chips and shaped pellets may be installed in unconsolidated formations via gravity pouring to a maximum depth of 50 feet as follows:

i. All bentonite chips and shaped pellets shall be installed in accordance with manufacturer's specifications. To prevent bridging, all fine material shall be removed through screening or equivalent method, as specified by the manufacturer; and

ii. The grout material shall be placed from bottom to top until all annular space that is to be sealed is completely filled.

(b) For wells in unconsolidated formations, when the casing is driven into an undersized hole in accordance with *N.J.A.C. 7:9D-2.2(a)8*, the provision for sealing the annular space shall not be required.

(c) The following procedures shall be followed when sealing the annular space of any well:

1. (No change.)

2. All pumpable grout slurry mixtures shall be weighed with a mud balance or otherwise verified by the well driller of the proper class so as to conform with the requirements in *N.J.A.C. 7:9D-2.9*;

3. The grout mixture shall be brought up to ground level to displace all water and materials in the annular space. Regrouting of a well is acceptable and shall be performed as follows:

i. Any settlement of the grout less than 50 feet from the ground surface shall be regROUTED and completed by the pressure method or by using sodium-based bentonite chips and shaped pellets in accordance with (a)5 above;

ii. (No change.)

iii. Any settlement of 50 feet or greater shall be regROUTED using the pressure method; and

iv. (No change.)

4. (No change.)

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7:9D-2.11 Well development and well redevelopment

(a)-(c) (No change.)

(d) Acceptable well development/redevelopment methods include:

1.-2. (No change.)

3. Air or gas surging, including pulsing, bursting, or inert gas injection;

4. (No change.)

5. Chemical treatment:

i. (No change.)

ii. All acids and other chemicals used for treatment shall be specifically designed for use in water well rehabilitation, shall be used and neutralized in accordance with the manufacturer's specifications, and shall be contained properly in accordance with *N.J.A.C. 7:26G*; and

iii. (No change.)

6.-7. (No change.)

(e)-(f) (No change.)

(g) Any method not specified above requires prior approval pursuant to *N.J.A.C. 7:9D-2.8*.

SUBCHAPTER 3. REQUIREMENTS AND PROCEDURES FOR THE DECOMMISSIONING OF WELLS AND BOREHOLES

7:9D-3.1 General requirements for the decommissioning of all wells and boreholes

(a) The owner of any well shall be responsible for having a well or borehole decommissioned in accordance with this chapter if the well is abandoned, destroyed, lost, and/or endangers or threatens the subsurface or percolating waters with the intrusion of saltwater or from any other cause, or if it endangers life.

(b) Notwithstanding (a) above, the well driller is also and primarily responsible for decommissioning a borehole or well that is abandoned during construction or is not completed or is not constructed in accordance with the provisions of this chapter in effect at the time of construction.

(c) The Department may order the decommissioning of any well or borehole, or any appurtenances thereto, which:

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1. (No change.)
2. Has been constructed in violation of the Act or this chapter;
3. (No change.)
4. Is damaged or destroyed;
5. (No change.)
6. Is contaminated or otherwise unfit for the intended purpose;
7. Has salt water intrusion;
8. Is non-productive;
9. Any other circumstance that endangers life, health, or the environment; or
10. Other good cause.

(d) Any person who fails to comply with an order to decommission a borehole or well pursuant to (c) above shall be subject to penalties pursuant to N.J.A.C. 7:9D-4.

(e) The Department may require or allow a well or borehole to be decommissioned by a method other than as set forth in this subchapter, for good cause, where unusual circumstances are encountered which would prevent compliance with the standard decommissioning requirements.

(f) All wells and boreholes shall be decommissioned by, or in the presence of and under the onsite supervision of, a well driller of the proper class. The well driller shall keep an electronic or paper copy of the well record or approved decommissioning plan onsite at all times for inspection by any authorized local, county, or State official.

(g) For all wells, other than hand dug or domestic wells that have a diameter of two inches or less, the well driller shall obtain all applicable well records prior to decommissioning the well in order to verify the depth, diameter, and construction of the well. If a well record is not available from the property owner or local regulating agency, a well driller shall follow the well search directions available on the Department's website pursuant to N.J.A.C. 7:9D-1.17.

(h) Upon request, the well driller shall provide additional information to the Department about a well or borehole prior to the well being decommissioned. Such information may include, but is not limited to, data gathered via geophysical logging, downhole televising, or groundwater sampling.

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(i) Any hazardous waste, including, but not limited to, contaminated casing, cuttings, sediment, displaced water, or free product generated during the decommissioning, shall be handled in accordance with *N.J.A.C. 7:26G*.

(j) The following types of wells shall not be decommissioned until the well driller proposing to decommission the well has first obtained written approval of a decommissioning plan from the Department pursuant to (k) below:

1. Wells, other than hand dug or domestic wells that have a diameter of two inches or less, for which no well record can be obtained;
2. Wells that are contaminated with hazardous waste and/or radiological materials;
3. Wells that are affected by saltwater intrusion;
- 4.-5. (No change.)
6. Multiple cased wells;
7. Wells drilled for the installation of elevator shafts; or
8. Wells for which the well record does not match the measured depth, diameter, and construction of the well.

(k) A decommissioning plan proposal shall be submitted by a well driller on the form prescribed by the Department pursuant to *N.J.A.C. 7:9D-1.17* prior to the decommissioning of a well in accordance with (j) above. The Department shall issue a written approval or denial of the decommissioning plan proposal. Approved decommissioning plans will be issued an approval number and shall be valid for a period of two years. If the well is not decommissioned within two years of approval, a new decommissioning plan shall be submitted to the Department. All decommissioning plans shall include the following information:

1. Well owner and location of well, including county, municipality, lot, block, New Jersey State Plane coordinates, and street address;
2. Well construction, including, but not limited to, depth and diameter of the well and number of casings. If a well search fails to locate a well record for a domestic well, the well driller may only report known construction details;
3. Proposed grout materials and method of decommissioning;
4. Actual or potentially hazardous conditions within the well or surrounding site, such as obstructions, impacts on nearby wells, or contamination;

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5. Well driller name, license number, and company name; and

6. A copy of the approved plan shall be kept available onsite at all times and made available for inspection upon request of any State, county, or local official.

(l) All other wells shall be decommissioned as follows:

1. (No change.)

2. If the well has been overdrilled to remove the entire casing, screen, and gravel pack, the resulting borehole shall be constructed to, and maintained at, the original depth of the well until this borehole is properly decommissioned in accordance with this subchapter;

3. Adequate protection shall be provided for the top of the borehole and/or the top of the well casing to prevent surface contamination from entering the well during the decommissioning operation and when the driller is not at the decommissioning site;

4. If it is known that an unsealed annular space exists between the outermost casing and the borehole, or between casings, the casing shall be perforated, ripped, or removed to insure that this space is sealed; and

5. All water used in the decommissioning process shall be of potable quality.

(m) The grout materials specified in *N.J.A.C. 7:9D* Appendix A and the grouting methods and selection criteria in *N.J.A.C. 7:9D-2.9* shall be used to decommission wells.

1. Only those materials or additives specifically designed for well decommissioning by the manufacturer and approved by the Department as specified in *N.J.A.C. 7:9D* Appendix A, shall be used to decommission wells. The material shall have a maximum permeability of 1×10^{-7} centimeters per second when prepared in accordance with manufacturer's specifications;

2. Bentonite-based thermally enhanced geothermal grout materials containing a minimum silica sand content of 200 pounds per 50 pounds of bentonite may be used in consolidated formations, provided the permeability meets the value specified in (m)1 above. All other bentonite-based grout materials listed in Table 3 and Table 5 of *N.J.A.C. 7:9D* Appendix A shall not be used as a decommissioning material in consolidated formations, or in those instances where it will come in contact with groundwater of a pH of less than 5.0 or a Total Dissolved Solids content in excess of 1,000 ppm.

3. Where the grout material extends through zones of saltwater, a cement-based grout approved for use in saltwater environments shall be used. See *N.J.A.C. 7:9D* Appendix A for mixes approved for use in saltwater environments.

(n) Decommissioning materials shall be installed using one of the following methods:

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1. Pumped into the well under pressure through a tremie pipe that discharges at the bottom of the well. If an annular space is being sealed, the material shall discharge at the bottom of the annular space. During sealing, the tremie pipe may be raised from the bottom of the space being filled in a manner which insures that the discharge end of the tremie pipe is constantly submerged within the column of undiluted decommissioning material in the well. The decommissioning material shall be pumped into the well until all water has been displaced from the well and until the decommissioning material overflowing the well has a density within the acceptable density range for that material; or

2. Sodium-based bentonite chips and bentonite pellets may be gravity poured in accordance with the manufacturer's specifications as follows:

i. To seal the annular space between casings or the annular space between the casing and the borehole to a maximum depth of 50 feet or inside the inner casing or borehole to a maximum depth of 100 feet;

ii. After all fine material has been removed through screening or equivalent methods to prevent bridging; and

iii. From bottom to top until all space that is to be sealed is completely filled.

(o) The well driller who decommissions the well shall return to the well no sooner than 24 hours, nor later than 72 hours, and fill any settlement of the decommissioning material in the well as follows:

1. By the pressure method, or by using sodium-based bentonite chips and shaped pellets in accordance with (n)2 above, for settlement less than 50 feet from ground surface; or

2. By the pressure method, for any settlement of 50 feet or greater in accordance with (n)1 above; and

3. After the completion of either (o)1 or 2 above, concrete shall be poured to form a slab which shall extend beyond the perimeter of the casing after any settlement is filled in accordance with (o)1 and 2 above. This slab shall be a minimum of six-inches thick and located at or below grade.

(p) The driller shall obtain written approval of a decommissioning plan from the Department pursuant to this chapter according to the procedures set forth at (k) above prior to deviating from the methods or materials set forth in this subchapter.

7:9D-3.2 Specific requirements for the decommissioning of dewatering wells and dewatering wellpoints

(a) Any dewatering well constructed into confined aquifers shall be decommissioned only by a New Jersey master, journeyman or journeyman (Class B) well driller in accordance with *N.J.A.C. 7:9D-3.1*.

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(b) (No change.)

(c) The well driller shall obtain written approval from the Department prior to instituting any modification in the decommissioning procedures. Applications shall be submitted pursuant to N.J.A.C. 7:9D-1.17.

(d)-(e) (No change.)

(f) If the casing and screen are left in place in a dewatering well greater than 25 feet in depth which has not penetrated a confining layer, the entire well/hole shall be decommissioned from the bottom of the well to the top in accordance with *N.J.A.C. 7:9D-3.1*. In order to prevent surface contamination from entering any annular space which has been gravel packed, the top 25 feet of the gravel pack and casing shall be removed to allow for the placement of a grout plug in accordance with *N.J.A.C. 7:9D-3.1*.

(g) (No change.)

7:9D-3.4 Specific requirements for the decommissioning of Category 4 uncased borings

(a) All borings shall be decommissioned within 72 hours of completion.

(b)-(c) (No change.)

(d) The decommissioning of borings installed by direct-push technologies using a pumpable grout mix shall be in accordance with this subchapter, except as follows:

1. The drive casing may be used as a tremie pipe provided the drive point is of the sacrificial type, or the casing is equipped with a grout shoe and is withdrawn as the decommissioning material is pumped into the driven borehole;

2.-4. (No change.)

(e) The decommissioning of borings greater than or equal to three inches in diameter and 50 feet or less in depth installed by direct-push technologies may use sodium-based bentonite chips and bentonite pellets in accordance with *N.J.A.C. 7:9D-3.1(n)2*.

7:9D-3.5 Specific requirements for damaged, destroyed, and/or lost wells

(a) When a well has been damaged, destroyed, and/or lost such that it cannot be decommissioned in accordance with this subchapter, the property owner or its agent shall contact the Department in writing and provide the following information, as appropriate:

1. The name, address, and telephone number of the current property owner;

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2. The facility and location information where the well was located, including county, township, lot, and block;
3. Timeframe when it was discovered that the well was damaged, destroyed, or lost;
4. The approximate date the well was damaged, destroyed, or lost;
5. Detailed description of the attempts made to locate the well in the case of lost wells, or attempts made to clear obstructions to facilitate decommissioning in the case of damaged or destroyed wells;
6. Circumstances by which the well was damaged, destroyed, or lost; and
7. Well permit number and well construction specifications, if known. If the well permit number is not known or a copy of the well record is not available, a well search request shall be conducted by following the well search directions on the Department's website pursuant to N.J.A.C. 7:9D-1.17.

(b) The owner of the property on which a well is located shall, upon the Department's determination that further measures are needed, undertake additional measures to locate a well, to clear obstructions to facilitate decommissioning, and/or further investigate the condition of the well.

SUBCHAPTER 4. CIVIL ADMINISTRATIVE ORDERS AND PENALTIES; DENIAL, SUSPENSION, AND REVOCATION OF LICENSES; DENIAL AND REVOCATION OF PERMITS; AND REQUESTS FOR ADJUDICATORY HEARINGS

7:9D-4.1 Purpose

This subchapter establishes the procedures governing the issuance of civil administrative orders, the assessment of civil administrative penalties, and the denial, suspension, or revocation of any license, or the denial or revocation of a permit, issued pursuant to the Act. This subchapter also governs the procedures for the submittal and review and grant or denial of any requests for adjudicatory hearings.

7:9D-4.2 General provisions

(a) The Department or the Board may investigate any possible violation of any provision of the Act or any provision of any rule, permit, license or administrative order promulgated or issued pursuant thereto including, but not limited to: obtaining a license or permit through error or fraud; failure to obtain a license prior to engaging in well construction or pump installation; aiding and abetting in violation of the Act or this chapter; failure to obtain a permit or to construct, modify, or decommission a well in accordance with the Act and this chapter; exhibiting gross negligence; and incompetence or misconduct in the practice of well drilling or pump installation pursuant to this chapter. The Department may take one or more of the following actions, including, but not limited to:

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1. Suspension of a well driller's license or pump installer's license for a period that is less than one year;
2. Revocation of a permit or a well driller's license or pump installer's license;
3. Issuance of an administrative order; and/or
4. Assessment of an administrative penalty.

(b) The Department or the Board may also take action against any person who has aided or abetted a violation.

(c) Any person whose license has been suspended or revoked shall not be considered a licensee and shall not conduct any activity for which a license is required, unless in the presence of and under the onsite supervision of an appropriately licensed well driller or pump installer, until the license is reinstated or a new license has been issued.

(d) Upon the Department's request, any licensee, any person holding a well permit, any person on whose property a well is located and any person who aids and/or abets a licensee or holder of a permit shall submit any additional information reasonably necessary to determine compliance with the Act, this chapter, an order, permit, or license.

1. Information shall be provided in the form and manner satisfactory to the Department.
2. Any licensee, any person holding a well permit, any person on whose property a well is located, and any person who aids and/or abets a licensee or permit holder who receives a request for information made pursuant to this subsection shall:
 - i. Conduct a diligent search of all documents and records in his or her possession, custody, or control, and shall make reasonable inquiries of present and past employees who may have knowledge or documents relevant thereto; and
 - ii. Have a continuing obligation to supplement and correct the information and shall submit the corrected or additional information within 10 calendar days of its discovery.
3. Any licensee, any person holding a well permit, any person on whose property a well is located, and any person who aids and/or abets a licensee or permit holder shall allow any authorized local, county, or State official, upon the presentation of credentials at a reasonable time and in a reasonable manner, to:
 - i. Enter the premises, property, facility, vessel, building, or location for purposes of inspection, sampling, monitoring, copying records or documents, photographing, or videotaping to determine compliance or non-compliance with the Act and this chapter;

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ii. Have access to and copy, any records or documents that must be kept pursuant to a license, permit, the Act or this chapter; and

iii. Inspect the premises of any well drilling or pump installation business to review equipment, materials, practices, or operations related to well drilling or pump installation.

(e) No administrative action taken pursuant to this subchapter shall affect the availability of any other remedies available pursuant to the Act or other applicable law, including, but not limited to, injunctive relief. Any person who fails to comply with a Department directive or order to seal a borehole or well shall be liable to the Department in an amount equal to three times the cost of sealing the borehole or well.

7:9D-4.3 Administrative orders

(a) The Department may issue an administrative order:

1. Against any person who has violated any provision of this chapter, permit, or license, or any provision of the Act pursuant to which this chapter has been promulgated, and/or against any person who negligently aids and/or abets in the commission of such violations, to require the cessation and/or correction of such violations; and

2. To order the decommissioning of any well or borehole to be decommissioned pursuant to *N.J.A.C. 7:9D-3.1(c)*.

7:9D-4.4 Civil administrative penalties

(a) The Department may, in accordance with (d) below, assess a civil administrative penalty of not more than \$ 5,000 for each violation directly related to the construction of a well, and a civil administrative penalty of not more than \$ 1,000 for each violation that is not construction-related, against any person that violates any provision of the Act or any provision of any rule, permit, license, or administrative order promulgated or issued pursuant thereto.

(b) (No change.)

(c) The Department may consider each violation of any provision of the Act, or any rule, permit, license, or administrative order issued pursuant thereto, as a separate and distinct violation. Each day during which a violation continues shall constitute an additional, separate, and distinct offense subjecting the violator to daily penalties in accordance with this subchapter.

(d) The Department may assess a civil administrative penalty for the following non-construction related violations at the mid-point of the following stated ranges unless adjusted pursuant to (i) below:

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*[

SERIOUSNESS

	Major	Moderate	Minor	
Major	\$ 4,000 - \$ 5,000	\$ 2,750 - \$ 3,750	\$ 2,000 - \$ 2,500	
CONDUCT Moderate	\$ 2,750 - \$ 3,750	\$ 2,000 - \$ 2,500	\$ 1,250 - \$ 1,750	
Minor	\$ 2,000 - \$ 2,500	\$ 1,250 - \$ 1,750	\$ 500.00 - \$ 1,000]*

1. Failure to submit a well record or well decommissioning report to the Department within 90 days of completion of the well or well decommissioning: \$ 400.00 through \$ 1,000;
2. Failure to display the name of the person or well drilling company on the equipment used for the installation, removal, maintenance, alteration, or repair of the well or the pump: \$ 400.00 through \$ 1,000;
3. Failure to respond to request for information from the Department in accordance with *N.J.A.C. 7:9D-4.2*: \$ 400.00 through \$ 1,000;
4. Failure to keep a copy of the well permit or well decommissioning plan onsite at all times for inspection by any authorized local, county, or State official: \$ 250.00 through \$ 750.00;
5. Failure to provide a New Jersey license of the proper class upon request during a work site inspection by any authorized local, county, or State official: \$ 250.00 through \$ 750.00;
6. Failure to provide a copy of the permit to the property owner: \$ 250.00 through \$ 750.00;
7. Failure to cancel a well permit within 90 days of the permit's expiration date: \$ 100.00 through \$ 500.00; or
8. Failure to notify the Department in writing of a change in mailing address or telephone number within 14 calendar days of the change: \$ 100.00 through \$ 500.00.

(e) All violations, except those listed in (d) above, are construction-related violations. The Department may assess a civil administrative penalty for all violations, other than those listed at (d) above, as follows:

1. To assess a penalty for a construction-related violation the Department shall:

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- i. Determine the seriousness of the violation pursuant to (f) below;
- ii. Determine the conduct of the violator pursuant to (g) below; and
- iii. Use the information in (e)1i and ii above to identify the civil administrative penalty range within the matrix in (e)2 below.

2. The civil administrative penalty for each construction-related violation shall be assessed at the midpoint of the range within the following matrix, unless adjusted pursuant to (i) below:

SERIOUSNESS

	Major	Moderate	Minor
Major	\$ 4,000 - \$ 5,000	\$ 2,750 - \$ 3,750	\$ 2,000 - \$ 2,500
CONDUCT Moderate	\$ 2,750 - \$ 3,750	\$ 2,000 - \$ 2,500	\$ 1,250 - \$ 1,750
Minor	\$ 2,000 - \$ 2,500	\$ 1,250 - \$ 1,750	\$ 500.00 - \$ 1,000

(f) The Department shall determine the seriousness of the violation as major, moderate, or minor as follows:

1. Major seriousness shall include any violation that has caused or has the potential to cause serious harm to public health, safety, welfare, or the environment or which seriously deviates from the requirements of the Act, or any rule, permit, license, or order adopted or issued pursuant thereto. Violations of major seriousness also include those which are in complete contravention of such requirements or, if some of the requirements are met, which severely impair or undermine the operation or intent of the requirements, including, but not limited to:

- i. Falsifying any statement, representation, or certification in any application, record, report, or other document submitted or maintained, under the Act, or any rule, permit, license, or order adopted or issued pursuant thereto;
- ii. Constructing, commencing, or proceeding to drill, build, modify, install, re-designate, maintain, replace, repair, or decommission a well, pump, or appurtenances without a permit, approved decommissioning plan pursuant to *N.J.A.C. 7:9D-3.1(j)*, or a proper license;
- iii. Refusing, inhibiting, prohibiting, or otherwise preventing immediate lawful entry and inspection of any premises, building, property, facility, vessel, or place, by any authorized local, county, or State official; or
- iv. Constructing, commencing, or proceeding to build, modify, install, maintain, re-designate, replace, repair, destroy, or decommission a well, pump, or appurtenances in violation of this chapter or a permit condition imposed pursuant to this chapter, except as provided at (f)2i below.

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2. Moderate seriousness shall include any violation, which has caused or has the potential to cause substantial harm to public health, safety, welfare, or the environment or which substantially deviates from the requirements of the Act, or any rule, permit, license, or order adopted or issued pursuant thereto. Violations of moderate seriousness also include those which are in substantial contravention of such requirements or, if some of the requirements are met, which substantially impair or undermine the operation or intent of the requirements, including, but not limited to:

- i. Failure to notify the Department prior to drilling, if required by the permit; and
- ii. The installation, repair, removal, replacement, or modification of any pump or appurtenance in violation of this chapter;

3. Minor seriousness shall include:

- i. Any violation not included in (f)1 or 2 above; and
- ii. The inadvertent submission of inaccurate or incomplete information to the Department that is corrected within the timeframe established by the Department.

(g) The Department shall determine the conduct of the violator as major, moderate, or minor as follows:

1. Major conduct shall include any intentional, deliberate, purposeful, knowing, or willful act or omission by the violator;
2. Moderate conduct shall include any unintentional but foreseeable act or omission by the violator; and
3. Minor conduct shall include any other conduct not identified in (g)1 or 2 above.

(h) When the Department determines that the violator has gained an economic benefit from a violation, the Department may, in addition to any other civil administrative penalty assessed pursuant to this subchapter, include as part of a civil administrative penalty established under (d) or (e) above, the economic benefit (in dollars) which the violator has realized as a result of not complying, or by delaying compliance, with the requirements of the Act, or any rule, license, permit, or administrative order issued pursuant thereto.

1. Economic benefit shall include:

- i. The amount of savings realized from avoided capital or non-capital costs resulting from the violation;
- ii. The return earned or that may be earned on the amount of the avoided costs;
- iii. Any benefits accruing to the violator as a result of a competitive market advantage enjoyed by reason of the violation; and

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iv. Any other economic benefits resulting from the violation.

2. The Department may consider the following factors in determining economic benefit:

i. The amount of capital investments required, and whether they are one-time or recurring;

ii. The amount of one-time non-depreciable expenditures;

iii. The amount of annual expenses;

iv. The useful life of capital;

v. Applicable tax, inflation, and discount rates;

vi. The amount of low interest financing, the low interest rate, and the corporate debt rate; and

vii. Any other factors relevant to economic benefit.

3. If the total economic benefit was derived from more than one violation, the total economic benefit amount may be apportioned among the violations from which it was derived, so as to increase each civil administrative penalty assessment to not greater than \$ 5,000 per day for each construction related violation and not greater than \$ 1,000 per day for each non-construction related violation.

(i) The civil administrative penalty shall be established at the mid-point of the ranges set forth at (d) and (e) above, unless adjusted by the Department in its discretion to an amount no greater than the top nor less than the bottom of each applicable range, on the basis of the following factors:

1. (No change.)

2. The type, number, frequency, extent, and severity of the violations;

3. The nature, timing, and effectiveness of any measures taken by the violator prior to the issuance of an order to mitigate the effects of the violation for which the penalty is being assessed;

4. The nature, timing, and effectiveness of any measures taken by the violator prior to the issuance of an order to prevent future similar violations;

5. Any unusual or extraordinary costs or impacts directly or indirectly imposed on the public or the environment as a result of the violation;

6. Any economic benefit realized by the violator;

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7. The deterrent effect of the penalty;
8. The cooperation of the violator prior to the issuance of an order in correcting the violation, remedying any environmental damage caused by the violation and ensuring that the violation does not reoccur;
9. The potential or actual harm to the public health, safety, or the environment resulting from the violation; and
10. (No change in text.)
- (j) (No change in text.)

7:9D-4.5 Basis for denial of license

(a) Upon the recommendation of the Board, the Department may deny issuance of a well drilling license of the proper class or pump installer license upon a determination that:

1. (No change.)
2. The applicant has provided false or inaccurate information in the application;
3. The applicant has failed to correct a violation or otherwise failed to comply with the Act, this chapter, a permit, a court order, an administrative order, or has failed to pay a due and owing penalty;
4. The applicant's experience is based on well drilling or pump installing not in accordance with the Act or this chapter;
5. The applicant did not possess the requisite experience as required at *N.J.A.C. 7:9D-1.8*;
6. The applicant has not been recommended by the Board; or
7. Other good cause.

7:9D-4.6 Basis for suspension or revocation of license

(a) Upon recommendation from the Board, the Department may suspend or revoke, on an individual case basis, any license, upon a determination that:

1. A licensee has committed fraud, error, or deceit in obtaining his or her license;
2. A licensee has committed one or more construction-related violation(s);

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3. A licensee has committed one or more non-construction-related violations;
4. A licensee has demonstrated gross neglect, incompetence, or misconduct in the practice of well drilling or pump installation or repair in the State of New Jersey;
5. A licensee has willfully violated any provision of the Act or any other State statute relating to the installation or repair of wells and well pumping equipment;
6. A licensee has failed to correct a violation or otherwise failed to comply with the Act, this chapter, a permit, a court order, an administrative order, or has failed to pay a due and owing penalty;
7. A licensee has committed a violation which causes, or has the potential to cause, substantial harm to public health, safety, or welfare of the environment; or
8. Other good cause.

7:9D-4.7 Procedures for civil administrative orders, assessment of civil administrative penalties, and suspension or revocation of license and adjudicatory hearings

(a) Any order, any notice of civil administrative penalty assessment, any notice of suspension of license, or any notice of revocation of license issued pursuant to this subchapter shall:

1. Be served by certified mail, return receipt requested, or personal service at the address on file with the Department upon the person or persons who are the subject of the order or notice;
 - i. Where certified mail and personal service has been attempted by the Department and has not been successful, service shall be by first class mail to the address on file with the Department;
2. Identify the person or persons subject to the order or notice;
3. Set forth a concise statement of the facts alleged to constitute a violation;
4. Identify the specific provision or provisions of the Act, rule, permit, license, or order which have been violated;
- 5.-6. (No change.)
7. Advise the person or persons named in the order and/or notice of the right to request an adjudicatory hearing pursuant to the provisions of *N.J.A.C. 7:9D-4.8*;
- 8.-10. (No change.)

(b) (No change.)

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(c) Suspension or revocation of license shall commence, and payment of a civil administrative penalty is due upon receipt by the violator of a final order or notice of the Department in a contested case proceeding or when the notice of suspension or revocation of license or notice of civil administrative penalty assessment becomes a final order as follows:

1. If no hearing is timely requested pursuant to *N.J.A.C. 7:9D-4.8*, an order, a notice of civil administrative penalty assessment, notice of suspension, or notice of revocation becomes a final order on the 21st day following receipt of the order or notice by the violator;
2. If the Department denies a hearing request, an order, a notice of civil administrative penalty assessment, notice of suspension, or notice of revocation becomes final upon receipt by the violator of the notice of denial;
3. If a hearing request is submitted by the violator and subsequently withdrawn, the order, the notice of civil administrative penalty assessment, notice of suspension, or notice of revocation becomes final upon such withdrawal unless the violator and the Department have executed an administrative consent order or comparable instrument providing otherwise;
4. Any person whose license has been suspended or revoked shall surrender their license to the Department within two business days of receipt of the final notice of suspension or revocation. Suspended or revoked licenses shall be returned in person or via certified mail to the address set forth at *N.J.A.C. 7:9D-1.17*.

7:9D-4.8 Procedures to request an adjudicatory hearing to contest an administrative order, administrative penalty assessment, suspension of license, revocation of license or permit, or the denial of license or a permit

(a) Any person (hereinafter "petitioner") requesting an adjudicatory hearing to contest an administrative order, civil administrative penalty assessment, denial, suspension, or revocation of a license or permit or to challenge any permit or license condition, or who believes himself or herself to be aggrieved with respect to decisions made by the Department, shall:

1. (No change.)
2. Submit a copy of the request to the offices indicated in the document being contested.

(b) (No change.)

(c) Any written request for an adjudicatory hearing shall include the following:

1. (No change.)
2. The date the petitioner received a copy of the document being contested;

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3. A copy of the document being contested;

4. A list of all issues being contested;

Recodify existing 2.-3. as 5.-6. (No change in text.)

7. Information and documentation supporting the hearing request and specific reference to, or copies of, other written documents relied upon to support the request;

Recodify existing 5.-6. as 8.-9. (No change in text.)

(d)-(e) (No change.)

(f) No permit or license which is the subject of a final order of suspension, revocation, or denial shall be valid during the pendency of any action on appeal to a court of competent jurisdiction from that order, unless a stay of the final order has been granted.

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APPENDIX A

Table 1
Portland Cement¹

Type of Cement	Pounds of Cement	Gallons of Water	Target Density lbs/gal	Acceptable Density/Range lbs/gal	Water/Cement Ratio
I & II	94	5.2	15.6	15.0 to 16.3	0.46
III	94	6.3	14.8	14.2 to 15.5	0.56

¹ Approved for use in saltwater environments

Table 2
Portland Cement and Sodium-based Bentonite; Use Portland Cement Types I or II Only²

Percent Bentonite	Pounds of Bentonite	Pounds of Cement	Gallons of Water	Target Density lbs/gal	Acceptable Density/Range lbs/gal	Water/Cement Ratio
5.3	5.0	94	8.3	13.9	13.4 to 14.5	0.74

² Approved for use in saltwater environments

Table 3
Sodium-based Bentonite (Figures Based on 15 to 30 Percent Solids by Weight)

Pounds of Bentonite	Target Gallons of Water	Acceptable Range of Water (gallons)	Target Density lbs/gal	Acceptable Density Range lbs/gal
50	18	14-34	9.8	9.2 to 10.2

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Table 4

Cementitious Thermally Enhanced Grout³

Pounds of Cement (Type I, II or V)	Amount of Superplasticizer (Sulfonated Napthalene) 21 ounces per bag of cement (not to exceed 29 ounces)	Pounds of Dried Silica Sand Conforming to the Sieve Analysis ⁴	Pounds of 200 Mesh Sodium Bentonite	Target Gallons of Water	Target Density lbs/gal
94		200	1.04	6.19	18.2

*Sieve No. (Size, um)

*Percent Passing (%)

8 (2360)	100
16 (1180)	95-100
30 (595)	55-80
50 (297)	30-55
100 (149)	10-30
200 (75)	0-10

³ Approved for use in saltwater environments

⁴ Compound shall be washed, dried silica sand which is graded and shall have less than 20 percent by weight retained on a U.S. Sieve #50 and shall have AFS GFN (American Foundrymen's Society Grain Fineness Number) between 55.0 and 75.0. The silica content (SiO₂) shall be greater than 99 percent.

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Geo Energy Alternatives⁵

Product Name	Thermal Conductivity k (Btu/hr• ft•°F) (ASTM D-5334)	Pounds of GA-XTRA grout powder	Water (gallons)	Density (lb/gal)
GA-XTRA Grout	1.0	50	4.0 +/- .5	12.5 +/- .5

⁵ Approved for use in saltwater environments

Table 5
Bentonite-based geothermal grout products

Baroid Industrial Drilling Products

Product Name	Thermal Conductivity k (Btu/hr• ft•°F)	Pounds of bentonite material	Pounds of thermal enhancement compound ² (silica sand)	Water (gallons)	Density (lb/gal)
Barotherm	.4	50	0	14	10.2
Barotherm	.52	50	50	14.6	11.4
Barotherm	.64	50	100	15.5	12.3
Barotherm	.76	50	150	16.5	13.0
Barotherm	.88	50	200	17.6	13.4
Barotherm	1	50	250	19.3	13.7

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Barotherm Gold	.4	50	0	15.3	10.1
Barotherm Gold	.69	50	100	15.3	12.5
Barotherm Gold	.76	50	150	16.3	13.2
Barotherm Gold	.88	50	200	17.3	13.7
Barotherm Gold	1.0	50	250	18.3	14.1
Barotherm Gold	1.0	50	300	19.5	14.4
Barotherm Gold	1.1	50	350	20.0	14.7
Barotherm Gold	1.2	50	400	21.0	15.0

Product Name	Thermal Conductivity k (Btu/hr•ft•°F)	Barotherm Gold 1.0 (50-lb bags)	Water (gallons)	Density (lb/gal)
Barotherm Gold 1.0	1.0	4	12.3	14.0
Barotherm Gold 1.0	1.0	6	18.5	14.0
Barotherm Gold 1.0	1.0	8	24.6	14.0
Barotherm Gold 1.0	1.0	10	30.8	14.0

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Product Name	Thermal Conductivity k (Btu/hr• ft•°F)	Barotherm Gold 1.2 (50-lb bags)	Water (gallons)	Density (lb/gal)
Barotherm Gold 1.2	1.2	5	11.9	14.9
Barotherm Gold 1.2	1.2	7	16.7	14.9
Barotherm Gold 1.2	1.2	9	21.5	14.9
Barotherm Gold 1.2	1.2	11	26.3	14.9

Product Name	Thermal Conductivity k (Btu/hr• ft•°F)	Barotherm Max (50-lb bags)	Water (gallons)	Density (lb/gal)
Barotherm Max	1.3	1	9	11.1
Barotherm Max	1.6	1	7	11.6

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CETCO Drilling Products

Product name	Thermal Conductivity k (Btu/hr• ft•°F) (ASTM D-5334)	Thermal Conductivity k (Btu/hr• ft•°F) (ASTM C-518)	Pounds of bentonite material	Pounds of thermal enhancement compound ² (silica sand)	Water (gallons)	Density (lb/gal)
Geothermal Grout	.40	.53	50	0	14	10.2
Geothermal Grout	.85	1.00	50	200	16	13.7
Geothermal Grout	.90	1.05	50	250	17	14.1
Geothermal Grout	.95	1.10	50	300	19	14.2
Geothermal Grout	1.00	1.25	50	350	20	14.5
Geothermal Grout	1.05	1.40	50	400	22	14.6

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Product name	Thermal Conductivity k (Btu/hr•ft•°F) (ASTM D-5334)	Pounds of bentonite	Pounds of thermal enhancement compound ² (silica sand)	Water (gallons)	Density (lb/gal)
High TC Geothermal Grout	.40	50	0	14	10.2
High TC Geothermal Grout	.90	50	200	16	13.7
High TC Geothermal Grout	1.00	50	250	17	14.1
High TC Geothermal Grout	1.07	50	300	19	14.2
High TC Geothermal Grout	1.15	50	350	20	14.5
High TC Geothermal Grout	1.21	50	400	21	15.1

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GeoPro Inc.

Product name	Thermal Conductivity k (Btu/hr•ft•°F)	Pounds of bentonite material	Pounds of thermal enhancement compound ⁶ (silica sand)	Target gallons of water	Acceptable Range of Water (gallons)	Target Density (lb/gal)
Thermal Grout Lite	.45	50	0	14.00	13.50 – 14.50	9.8
Thermal Grout Lite	.57	50	50	14.50	14.00 – 15.00	10.9
Thermal Grout Lite	.69	50	100	15.50	15.00 – 16.00	11.7
Thermal Grout Lite	.79	50	150	16.50	16.00 - 17.00	12.5
Thermal Grout Lite	.88	50	200	17.50	17.00 – 18.00	13.2
Thermal Grout Lite	1.00	50	250	19.25	18.75 - 19.75	13.3
Thermal Grout Select	1.00	50	250	19.25	18.75 – 19.75	13.3
Thermal Grout Select	1.07	50	300	20.50	20.00 – 21.00	13.9
Thermal Grout Select	1.14	50	350	21.50	21.00 – 22.00	14.2
Thermal Grout Select	1.20	50	400	22.50	22.00 – 23.00	14.5

⁶All thermal enhancement compound material must meet manufacturer specifications.

Note: All information in Tables 1 through 5 is taken directly from manufacturer data submissions or product specifications. The Department has not independently verified the values listed. All grouts used in the construction of wells must meet performance standards established by the Department despite any inaccuracies reported by the manufacturers.